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This volume lacks
the "comprehensive
index" which was
issued separately.

The "short index"
at the rear is not
the same item.

C. G. Kee

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British Birds

AN ILLUSTRATED MONTHLY JOURNAL

Edited by

P. A. D. Hollom E. M. Nicholson

I. J. Ferguson-Lees Stanley Cramp

Photographic Editor: Eric Hosking

Hon. Editors: W. B. Alexander N. F. Ticehurst

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January
1960

British Birds

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Edited by

P. A. D. Hollom

E. M. Nicholson I. J. Ferguson-Lees

S. Cramp

Photographic Editor: Eric Hosking

Editorial Address: 30 St. Leonard's Avenue, Bedford

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FRONTISPIECE TO VOLUME 53. Lammergeier (*Gypaëtus barbatus*) at nest, Spain, June 1959, showing the deep orange colour on the head and under-parts (see page 29)
(colour blocks by courtesy of Kodak Limited from a Kodachrome by Eric Hosking)

British Birds

VOL. 53 No. 1

JANUARY 1960



PURCHASED

Editorial

IT IS NOW NINE YEARS since the early loss of Bernard Tucker, so soon after he had succeeded Harry Witherby in the editorship, faced *British Birds* with the most severe crisis of its existence. The editorial continuity, so vital for the maintenance of the character and standards of the journal, had almost been broken. At the same time rising costs and adverse conditions for all periodicals had to be weathered, while the task of keeping abreast of the mounting flood of ornithological output was threatening to become impossible.

In response to this daunting challenge the newly re-formed editorial team rallied to the standards and traditions which Harry Witherby had laid down, but sought to harmonise them with the vigorous new forces prominent in post-war ornithology. A close working understanding was reached with the British Ornithologists' Union regarding additions to the British List, and with editors of county reports concerning the criteria for accepting sight records of rarities. The policy of publishing bird photographs of exceptional subject interest and high technical standard was further developed under the talented guidance of George Yeates. Prominence was given to the work of bird observatories, whose flourishing condition owed much to one of the new members of the editorial board, W. B. Alexander. Stimulated by the robust common sense of Arnold Boyd, the team put up a pretty successful resistance against the encroachment of jargon and unnecessary technicalities. Reviving interest in European ornithology (arising in no small part from *A Field Guide to the Birds of Britain and Europe*, of which P. A. D. Hollom was a joint author) led to the enlistment of a growing band of eminent Continental contributors from Scandinavia round to Spain.

The editorial team of the "fifties", however, despite its not inconsiderable achievements, must frankly recognise that it has not proved strong enough to do all that was required of it. Even though I. J. Ferguson-Lees was enabled to retire from teaching and devote his

whole time to the executive editorship, the scale and multiplicity of editorial tasks and correspondence has far outrun and constantly tended to swamp the combined capacities of the team. Its age composition and geographical dispersion have to a serious extent weakened the board by preventing it from meeting as a whole. Inability to raise circulation correspondingly with increasing demands from many quarters for unpaid services and advice has proved a chronic handicap. Successive printing trade difficulties have added severely to the strain, and have contributed their quota to recurrent lateness in publication.

The time has therefore come for a radical overhaul, and with the opening of 1960 a series of important changes are coming into effect. Very fortunately a further rise in subscription rates is not one of these: despite the costly new settlement in the industry, the necessity for passing on higher production costs to readers has been averted. Subscribers will continue to receive the twelve monthly issues plus the additional annual Ringing Number for £2 a year, including postage and dispatch. The only change in this direction will be that a simplified brief index will be included with the December issue, as in pre-war years, while the fully detailed index will in future be obtainable separately at a price of 5s. annually.

Hitherto *British Birds* has been printed for the publishers, H. F. & G. Witherby Ltd., by the associated printing firm Witherby & Co., even though this has sometimes meant latterly that for technical reasons part of the setting might have to be done in London and the rest in Watford. The publishers have now proposed, and the editors have agreed, that it would be more convenient to have all the printing done closer to the executive editor's office and, accordingly, *British Birds* is now being wholly produced in Bedford by Diemer & Reynolds Ltd. We cannot let this occasion pass without a tribute to the loyal and skilled service rendered over half-a-century by Witherby & Co. as printers. The exceptionally high and dependable standard of the photographic plates has often been praised in many countries, and is indeed held by some well-informed judges to be the highest in any ornithological journal in the world. Perhaps less widely appreciated, but in its way no less remarkable, has been the typographical skill demonstrated in such peculiarly exacting achievements as the setting of the annual Ringing Report. There seems no room for doubt that the new partnership, which we welcome, will bring increased convenience, closer contact and improved speed of production which is all-important for giving better service to our readers. In embarking on it we express our thanks and appreciation to Witherby & Co.

One of the immediate effects of the change is to enable certain improvements, or so we hope they will be judged, to be carried out in

the form of the journal, as we propose in future to call it, the word "magazine" no longer being generally understood as describing this type of periodical. Readers will notice that the new type allows significantly more separation between the lines to make for easier reading, and other minor changes, without radically departing from tradition, are designed to keep it abreast of modern practice: for example, instead of being LIII this new volume is 53. The new layout of the plates, too, allows bigger and more attractive reproductions.

At the same time, a series of new measures have been adopted to enable the editors to cope with the ever-increasing mass and complexity of ornithological material. The first of these reinforcements, already described in the August 1959 issue (*Brit. Birds*, 52: 240-244) is the new Rarity Records Committee. Unfortunately we have lost the services of one of the original ten members, H. P. Medhurst, who has now gone abroad. His advice will be missed, but he is to be succeeded by I. C. T. Nisbet—so that the Committee now consists of P. A. D. Hollom, H. G. Alexander, D. D. Harber, A. Hazelwood, I. J. Ferguson-Lees, Prof. M. F. M. Meiklejohn, Dr. I. C. T. Nisbet, Major R. F. Ruttledge and Kenneth Williamson, with G. A. Pyman as honorary secretary and compiler of the annual national rare birds report. No one who has not experienced the impact of the vastly increased sight records of rarities can appreciate the strain under which the well-tried system which was good enough until the last few years has entirely broken down. The new one will, we are confident, not merely equal but in several ways easily surpass the best standards of treatment of such records attained with the much less copious flow of the past, and will enable the arrears of publication which have recently been so distressing to be eliminated.

There are, however, many important notes which do not relate to rarities, and these also present increasing editorial difficulties with the growing body of relevant literature on each specialised aspect of ornithology, and the more advanced and sophisticated methods and topics of observation now current. Accordingly, to assist over this important and widely read department of the journal, a corresponding team has been created—consisting of P. A. D. Hollom, Stanley Cramp, I. J. Ferguson-Lees, Derek Goodwin, Dr. I. C. T. Nisbet and Dr. N. Tinbergen. The editors trust that by this means the number and value of the notes will be increased.

Among other objects, both these developments are designed to carry a long step further the policy of spreading the editorial duties and delegating responsibility to a wider and predominantly younger group representative of different parts of the country and different approaches and lines of study, including amateur and professional ornithologists together. Even if there were still a Harry Witherby, one-man direction

is no longer a possible basis for coping with modern ornithological output, and the best alternative is to bring together and rely on a balanced team of varied ages and outlooks, from which the necessary talent and experience to make good losses and to meet emergencies and new burdens can be found as they are required.

The logic of this approach calls for readiness among the members of the editorial board to bring in new blood and give fresh opportunities for acquiring experience, without waiting until some tragedy compels it. Accepting this situation, and the importance of enabling the responsible board to meet freely and frequently as a body in future, a number of changes in its composition take effect from the New Year. E. M. Nicholson, who assumed the responsibility of senior editor at short notice in order to cope with the emergency resulting from the death of Bernard Tucker, now hands over to P. A. D. Hollom, in effect changing places with him and remaining on the editorial board as an ordinary member. A new status of honorary editor is created in recognition of the position of those editors who are now prevented by age or infirmity from travelling, and cannot therefore participate in the active duties of the editorial board, namely Dr. N. F. Ticehurst, whose fiftieth year of editorial association we commemorated in last June's issue, and W. B. Alexander. It would be impossible to permit that their much valued connection with *British Birds* should be broken, and they will continue to be consulted from time to time, while being relieved of responsibility for the day-to-day editorial tasks. At the same time George Yeates, owing to his business commitments, has regretfully asked to be relieved of his duties as photographic editor, and, with the warm thanks of his colleagues for his unfailing helpfulness, is succeeded by Eric Hosking who needs no introduction and has indeed long been a principal contributor to the pictorial pages. The need for a new editor readily available for consultation on the spot and able to take responsibility for a block of editorial work has long been felt and will be met by the appointment to the editorial board of Stanley Cramp, chairman of the Scientific Advisory Committee of the British Trust for Ornithology and well known for his bird census and other studies.

It seems unnecessary to describe here other consequential or domestic changes of a secondary nature. The steps now taken have been carefully thought out in order to give better service to our subscribers and to ornithology. We hope they will enjoy the support of our readers and contributors.

E. M. N.

The height of bird migration

By David Lack

Edward Grey Institute, Oxford

INTRODUCTION

MIGRATING BIRDS cannot be seen when they are high above the ground by day, even with military optical equipment (Sutter 1950), and means have not yet been found for accurately assessing the height of night-migrants seen by telescope against the face of the moon (Lowery 1951). Moreover, small birds, and even large ones, are extremely hard to see from a fast-moving aircraft. Most records of birds seen from aircraft have been below 4,000 feet (Mitchell 1955, 1957), though large birds occasionally, and small birds very rarely, have been observed at around 10,000 feet above the ground (Hürzeler 1950, Meinertzhagen 1955, Miller 1957). Only with the new technique of radar has it become possible to obtain a true assessment of the height of migration. By this means, Sutter (1957) found that nearly all morning movements in Switzerland occurred less than 800 metres above the ground, though occasionally up to 1,300 metres. On morning and evening movements above Hertfordshire, migration was commonest at 2-3,000 feet, frequent up to 5,000 feet and very infrequent above 10,000 feet, the highest birds being at 13,000, 14,000 and 16,000 feet (Harper 1958), while records of a similar nature were obtained above Worcestershire (Houghton and Coultas 1959).

At intervals from October 1958, I have through the courtesy of R.A.F. Fighter Command obtained many heights for bird migrants over Norfolk and over the North Sea off Norfolk, by means of a new, much more powerful and more accurate height-finder than those previously in use in Europe. It was operated in conjunction with a plan-position display on which, as discussed elsewhere (Lack 1959), bird-echoes are readily recognised, and I am confident that all the echoes on the height-finder here attributed to birds in fact came from them, most from Passerines and some from waders. On both types of equipment, wader echoes are larger than those from Passerines and are further recognisable on the plan-position display by their faster speed and by their manner and times of occurrence. Because of its high power, the new height-finder is specially useful for recording parties or even single birds at great heights. However, where echoes from Passerine birds are numerous, as is normal at low heights, they merge with each other and cannot be counted separately. Further, birds flying close to the ground are not usually detected by radar.

Hence the mean height of Passerines could not be assessed, though it was possible to calculate this for some wader movements because of their widely spaced echoes and the fact that none was low.

OBSERVATIONS

In late October and early November 1958, with light winds, there were big westward arrivals in Norfolk, from the direction of northern Holland, of birds which had obviously left the Dutch coast during the night or the first part of the morning. The echoes were characteristic of Passerine birds of moderate size, and the commonest species were probably Starlings (*Sturnus vulgaris*) and Chaffinches (*Fringilla coelebs*). Many Blackbirds (*Turdus merula*) also arrived in Norfolk in this period, but whether westward from Holland or southwestward from Scandinavia, or both, is not certain. On the westward movements, all the echoes were normally at or below 3,000 feet above the sea during the morning departures, and this also held during some of the nocturnal movements, though on other nights they were frequent up to 4,000 feet. Early on one morning there was a gap between the last nocturnal departures and the first morning ones, the birds that left Holland during the dark extending to 4,000 feet but those that left by day reaching only 3,000 feet.

In late October and early November 1958 there were also southwestward arrivals in the early morning, presumably of night-migrants from Scandinavia. The echoes were again typical of moderate-sized Passerine birds, and the commonest species were probably Redwings (*Turdus musicus*) and Fieldfares (*T. pilaris*), and perhaps also Blackbirds. During these movements, heights commonly extended to 7,000 feet, with a few at 8-10,000 feet and one at 11,000 feet, and similar heights, again including one at 11,000 feet, were obtained during one small evening arrival from the same direction, presumably of birds that left Scandinavia around dawn. Hence the Scandinavian migrants travelled higher than those from Holland, but further study is needed to determine whether this was because different species, chiefly thrushes, were involved, or because the Scandinavian birds had travelled for 400 instead of 100 miles over the sea.

Many height-records were also obtained when the same species of winter visitors left Norfolk in late March and the first half of April 1959. Although a mean height could not be obtained, it was possible on seven mornings to determine the most frequent height: three times this was around 2,000 feet, once 2-3,000 feet, once around 3,000 feet, twice around 4,000 feet and once around 5,000 feet. Hence if, as seems almost certain, these were the same species that arrived in Norfolk on October mornings, they tended to travel higher in the spring. This view is supported by the fact that in Norfolk much more diurnal

migration is low enough to be visible in autumn than in spring. Of over 700 individual height-records on spring mornings in 1959, about three-quarters were below 4,500 feet, but the true proportion must have been decidedly larger, owing to the merging of echoes at lower heights. On half the mornings watched, there was at least one bird as high as 9,000 feet, and I obtained a few records at 10,000, 11,000 and 12,000 feet, but some, and perhaps all, of these birds might have been individuals that set off during the night and had not yet descended.

In the same period of the spring, at night between 20.00 and 21.00 hours, echoes were usually so crowded that it was not possible to assess the most frequent height, though almost certainly this was at or below 5,000 feet. Occasionally echoes extended in a dense mass up to 9,000 feet, while on nearly half the nights watched there was at least one individual at 13,000 feet; the highest bird was at 14,000 feet. Hence the birds travelled rather higher by night than by day in spring, and decidedly higher by night in spring than by night in autumn.

I obtained many more height-records during the first three weeks of September, 1959, these being on very small night-migrants, presumably warblers, flycatchers and chats. Each night there was a big departure, heading SSE over the land, of birds giving very small echoes, and by 21.00 hours the highest individuals had usually reached 10,000 feet, twice 13,000 and once 14,000 feet above the ground—heights comparable with those obtained on the larger Passerine species departing eastward in spring. As in spring, mean heights could not be obtained, but most individuals were below 5,000 feet.

Around sunrise each day in September, there was also a regular arrival of birds from the sea giving very small echoes and heading about SSW, these presumably being warblers, chats and flycatchers that had left Scandinavia during the first part of the night. On sixteen mornings watched, most echoes were below, and perhaps well below, 6,000 feet, but each day a thin scattering of echoes extended fairly uniformly above this up to at least 15,000 feet, while on seven mornings the greatest height was 19,000 feet and on two mornings it was 21,000 feet. With an exceptionally large arrival on 14th September, at 06.00 hours, I recorded 13 individuals at 19,000 feet, 9 at 20,000 feet and 3 at 21,000 feet, while one hour before midday, when the movement was still continuing, though less densely, there were at least 5 birds at 19,000 feet, 2 at 20,000 feet and 3 at 21,000 feet (which must have been different individuals from those seen five hours earlier). I devoted only a short time each morning to heights, and since in these periods I recorded 30 birds at or above 20,000 feet, this cannot be very unusual; indeed, there may possibly have been some above 21,000 feet, since I made no special search to find exceptional birds. The weather throughout the period of these watches was fine and anti-

cyclonic with moderate northeasterly following winds, that is, it was typically favourable weather for migration at this time of the year.

On September evenings in 1959 I also obtained heights on wader-type echoes travelling west. These birds had evidently left the Dutch coast in the late afternoon and early evening. Probably most were Lapwings (*Vanellus vanellus*), which are often seen coasting west in north Norfolk at this time of year, but during one movement, with a sudden shower, I heard Curlew (*Numenius arquata*) calling overhead in the dark. Typically, Lapwing and Curlew migrate in compact parties, in which the individual birds are so close to each other that each party would give only one echo on the radar display. But the individual echoes were sufficiently far apart to allow the height of each party to be estimated separately, and hence a mean height could be calculated. Whereas in Passerine movements the height-records were normally spread fairly uniformly over a number of thousands of feet, in each wader movement nearly all the echoes were grouped within some two thousand feet of each other, thus giving a different pattern on the display, in the form of a band of echoes with sharp boundaries both above and below. On one occasion nearly all the records were around 3,000 feet and on another at 5-6,000 feet (mean 5,800 feet), while on the two days when the largest totals were recorded, the mean of 104 echoes on 14th September was 4,700 feet and of 42 echoes on 17th September was 3,500 feet. These differences in mean height on different days were statistically significant. Above the main block of echoes there were a few rather higher ones, which on some days extended up to 8,000 or 9,000 feet while once there was one at 11,000 feet. A similar picture was obtained by W. R. P. Bourne on Lapwings moving west from Holland into Suffolk in June 1959 when, on both diurnal and nocturnal movements, nearly all the echoes were between 4,000 and 8,000 feet, with on some days a few up to 10,000 feet.

Only once did I obtain height-records of small migrants, presumably Passerines, similar to those regular in Lapwings. In the early mornings in April 1959 there was often a northwestward movement of birds giving small echoes, arriving in east Norfolk and Suffolk from the southern North Sea, presumably small Passerine night-migrants from about Belgium. On the early morning of 3rd April 1959, but on no other occasion, 75 out of 93 heights obtained on this movement were at 4,000-4,500 feet, 10 more were around 5,000 feet and the rest a little higher, while none was below 4,000 feet. Hence the height-echoes formed a concentrated band. The meteorologist at an airfield in the area reported a bank of fog, the upper limit of which was estimated to be at 4-5,000 feet, and the northwestward immigrants evidently continued their flight inland just above this. Sutter (1957) recorded similar movements above fog in Switzerland and, like me,

did not otherwise observe a sharp cut-off in height-records where Passerines were involved.

DISCUSSION

Most migration occurs a very few thousand feet above the earth's surface, and this was the height to be expected on general grounds, for in most areas it is high enough to keep the birds clear of a rise in the terrain and above ground mist. But one would not expect migrants to climb higher than necessary for their safety, since climbing involves the expenditure of energy. Further, at high altitudes their efficiency might be reduced by the lower oxygen pressure and by cold. In addition, the wind is stronger higher up, and since migrants do not normally wait for a following wind, a strong wind must in general be disadvantageous. Finally, once a migrant is aloft, it is advantageous for it to maintain a steady height, since any altitude lost must be regained.

Hence the first question suggested by the present observations is how migrants maintain their height. The experience of airmen indicates that it is extremely hard to maintain a constant height by visual means under any conditions, and particularly over the sea and at night. It may therefore be wondered whether migrant birds depend on purely visual means, or whether they may have other means of telling their altitude and perhaps even a special adaptation for this purpose. The present observations suggest that, whatever means may be used, migrating Lapwings assess their height above the sea at night more precisely than Passerine winter visitors to Britain, while the latter are less variable than the smaller Passerine summer visitors to northern Europe. Incidentally, if migrants can maintain a fairly constant height, one wonders what they do in those areas where they meet a mountain barrier, such as the Pyrenees which rise within a few miles by over 10,000 feet.

Secondly, man experiences discomfort from the reduced oxygen pressure above about 12,000 feet, and he is seriously incommoded in his muscular effort at 20,000 feet, where it is also very cold. Yet the latter height was occasionally attained by very small Passerine night-migrants. Do these migrants suffer from high altitude like man, or have they special adaptations? It should be stressed, however, that only a very small proportion of migrants occur at such heights.

Thirdly, the occasional occurrence of small Passerine night-migrants at 20,000 feet raises the possibility whether some of the rarities which reach Britain in September have arrived at this height. Since the wind is usually stronger higher up, they would drift faster higher up than lower down. This, however, is speculative, and it should be added that with easterly winds and anti-cyclonic weather, when most eastern

rarities occur in Britain, the rise in wind-speed with height is not usually great up to 20,000 feet.

SUMMARY

(1) The common Passerine winter visitors to Britain migrate mainly below 5,000 feet. They tend to fly higher in spring than autumn, and higher by night than by day. Occasional individuals were recorded up to 14,000 feet.

(2) Very small Passerine night-migrants in September were recorded up to 21,000 feet.

(3) Waders, mainly Lapwings (*Vanellus vanellus*), travel at a more constant height than Passerines, nearly all the echoes on any one movement being within 2,000 feet of each other, with a few somewhat higher. Most movements occurred between 3,000 and 6,000 feet, and the highest echo was at 11,000 feet.

(4) The problem of how birds determine their altitude is raised.

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Notes on anting by British Passerine birds in the wild

Introduced by K. E. L. Simmons

THIS IS A BRIEF introduction to, and comment on, the notes by others which follow. These have been assembled from various sources. Four came to hand through editorial channels (those of Miss B. M. Atkey, Mrs. M. L. Colthurst, A. K. Kent and F. E. Mud-deman). The remainder originated from my own correspondence and personal communications, primarily as a result of an article in *The Countryman* (55: 614-621) and of addresses to the B.O.U. Centenary Conference and the London Natural History Society. Some of the notes (those of Mrs. A. L. Burrington, Miss S. M. Butlin, Mrs. L. Hamer, Miss M. E. Lyddon, H. G. Hurrell and Charles G. Young) were not in the first instance intended for direct publication, but have now been cast in their present form because I thought it best that these most interesting observations should appear over their originators' names, rather than be referred to at second-hand by me.

Some recent studies

Since the publication in 1957 of my review on anting (Simmons 1957), there has been much progress in the study of this intriguing behaviour. Especially notable are the papers by Sauer (1957), Whitaker (1957) and Chisholm (1959). Sauer describes the anting of hand-reared Garden Warblers (*Sylvia borin*) with Wood Ants (*Formica rufa*). Chisholm gives a history of anting with special reference to Australian observations. Mrs. Whitaker, as well as describing in detail the anting performances of her tame Orchard Oriole (*Icterus spurius*), reviews the anting literature, provides an invaluable bibliography and lists both the birds recorded as anting and the ant species used by them. Of particular value is her clarification of some of the myrmecological aspects of anting. She shows that birds seem to be selective in their choice of ants and use, almost exclusively, species of two sub-families which either eject formic-acid (the Formicinae) or exude repugnatory anal-fluids (the Dolichoderinae). Her own bird anted with this latter group and would not use ants of the sub-family Myrmicinae, the members of which have a functional sting. Formicine ants were not available.

During 1958 and 1959 my own studies have been intensified. I have tried primarily to find out more about the anting of British birds in the wild and about the British ant species acceptable to them. In

all, ten species of ants were located (chiefly in the Reading area of Berkshire) and used in over a hundred experiments. Eight species were acid-ejecting Formicinae (*Lasius niger*, *L. brunneus*, *L. flavus*, *L. umbratus*, *L. fuliginosus*, *Formica fusca*, *F. sanguinea*, *F. rufa*); the ninth was the only British representative of the anal-fluid producing Dolichoderinae (*Tapinoma erraticum*); and the last was one of the stinging Myrmicinae (*Myrmica rubra*). Wild birds of several Passerine species, including some species known to ant, were seen eating ants or feeding in ant-frequented habitats without doing any anting. Anting was recorded, however, from three Blackbirds (*Turdus merula*) and a Robin (*Erithacus rubecula*); all used swarming worker-ants of the species *Lasius niger*.

Then a series of most exciting observations, some in company with Robert Gillmor, were made on the reactions of wild birds to Wood Ants (*Formica rufa*) deposited in gardens where the species was not indigenous. Several Starlings (*Sturnus vulgaris*), some Blackbirds, a juvenile Song Thrush (*Turdus philomelos*), Robin and Blue Tit (*Parus caeruleus*), and a Jay (*Garrulus glandarius*) anted under these semi-natural circumstances. Another set of tests involved the presentation of British ants to captive British and foreign birds. Here, anting was recorded from a Song Thrush with the ants *Lasius niger*, *L. flavus*, *L. umbratus* and *Formica rufa*; from a Mistle Thrush (*Turdus viscivorus*) with *F. rufa*; from two Magpies (*Pica pica*) with *L. flavus* and *L. fuliginosus*; and from a Rook (*Corvus frugilegus*) with *F. rufa*. In addition, a further forty-two birds of 29 foreign Passerine species anted, chiefly at the London Zoo. These comprised two species of crow (Corvidae), a drongo (Dicuridae), a bowerbird (Paradisaeidae), six starlings (Sturnidae), six babblers (Timaliidae), a white-eye (Zosteropidae), two cardinals (Emberizidae), seven weaver finches (Ploceidae) and three estrildine finches (Estrildidae). Between them they used eight species of British ants, seven Formicine and the one Dolichoderine. None of the three species given the stinging *Myrmica rubra* would ant with it. A full account of all this work is in preparation, together with acknowledgements and a further review.

The notes on anting by British birds in the wild

The anting literature is notably deficient in detailed information on the anting of wild birds. Of necessity, of course, many of the more important studies on anting behaviour have been made on birds in captivity. Rarely can uncontrolled watching in the field equal observation at close hand in the aviary for accuracy of detail, including the actual movements involved and their causation. Invaluable as the study of captive birds is, however, it tells us little directly about the crucial question of the occurrence of anting in nature—how widespread

it is, how frequent, under what circumstances it happens, with what ants, etc. The various notes which follow in this feature (see pp. 15-25) add considerably to our rather meagre knowledge on some of these points.

F. E. Muddeman's (p. 17) is the first ever record of anting by the Blue Tit (indeed for any member of the Paridae), though, as mentioned above, Robert Gillmor and I have since seen a juvenile Blue Tit ant. Miss B. M. Atkey's record (p. 18) is the first British one for the Mistle Thrush and there seem to be only three others for this species: Amba (1951) saw wild Mistle Thrushes anting regularly at a nest-mound of the Wood Ant in Holland; Moltoni (1948) observed passive-anting by a tame bird; and my own tame Mistle Thrush applied Wood Ants intensely the first time it encountered them. Another bird for which there are anting records only within the last year or so is the Robin, and Mrs. A. L. Burrington's observations (p. 15) include another instance for this species. Beside my own, the only other record is that of C. Gubbins, mentioned without detail by Burton (1959).

To turn to types of anting, the notes by Miss S. M. Butlin (p. 20) and W. S. Nevin (p. 18) are the first on passive-anting by the Blackbird in this country, though there is a previous Continental record (Callegari 1955). Then, A. K. Kent's report (p. 18) provides only the second instance of what seems to have been passive-anting by a Song Thrush in the wild. A much older record by Bates (1937) is not well-known in this country, but must be one of the very first describing the anting of a native British bird. Bates tells how, at Folkestone in Kent, he was attracted by the peculiar antics of a Song Thrush which he was able to approach closely (6-8 feet) and watch for six or seven minutes. In spite of his presence, the bird continued to "bathe in red ants which were issuing from a crack in the flags close to the railings. Not only did it pick up one, two or sometimes three ants in quick succession and stuff them in between the tail feathers, into the tail-coverts, primaries and under the wings, but, with the tail and wings outspread, it often wallowed among the ants which could be seen swarming all over it." It is interesting to note, incidentally, that Bates's thrush, as well as the birds watched by A. K. Kent and Mrs. Burrington, was so engrossed in its anting that very close approach to it was possible. While the activities of Mrs. Burrington's thrush clearly come under the category "anting", it does not seem possible at the moment to decide just what the House Sparrow (*Passer domesticus*)* and Dunnock (*Prunella modularis*) were really doing when she saw them dragging their tails along the ground, apparently where ants were running about (see p. 17).

* I hope to deal with the anting records of the House Sparrow in more detail in a separate contribution.

The identity of the ants used by anting wild birds has nearly always presented a serious problem to ornithologists. Most people are not qualified to name them and find little help in the myrmecological literature. As a result, not surprisingly, the ants have usually gone unnamed. Of particular value, then, are the ant-identifications in the present feature. H. G. Hurrell (p. 20) records the use of *Lasius niger* by Blackbirds and Starlings; W. A. Smallcombe (p. 22), of *L. niger* and *L. flavus* by Starlings; Robert Gillmor (p. 23), of *L. niger* by a Starling. In the last case, I was able to identify the ants from the actual specimens used and then dropped by the bird. Miss Butlin sent me live examples from the ant-heaps in her garden, where a Blackbird and several Starlings anted, and these proved to be *L. flavus*. Mrs. Burrington also submitted live ants from her garden, of the same kind with which Starlings, Chaffinches, Song Thrushes, Blackbirds and a Robin anted; these were *L. niger* once more. The last species was also probably the ant involved in the anting instances reported by Miss M. E. Lyddon (Blackbirds, Starlings, Chaffinches—p. 19), Miss Atkey (Mistle Thrush) and A. K. Kent (Song Thrush). It begins to look as if *Lasius niger* is the ant most often used by anting wild birds in this country. *L. flavus*, on the other hand, has not previously been known to be used by wild birds anywhere, though I have seen captive Passerines ant with it. Strangely enough, also, there are no field records at all yet of any wild bird in this country anting with the Wood Ant in the latter's natural habitat; this ant has often figured in experiments with captive birds and both Derek Goodwin (1955) and I (see above) have seen wild birds anting with it when we deposited numbers in gardens where it does not normally occur.

The observations by Mrs. Burrington (p. 15) and Miss Lyddon (p. 19) especially, as well as Robert Gillmor's and my own, strongly suggest that birds are particularly likely to ant at the time of the ants' reproductive swarming—that is, when large numbers of workers accompany the emergence, from underground, of the winged sexes (the males and virgin queens) before their "marriage flight". Incidentally, Gillmor's record of the anting of a Starling with swarming workers of *Lasius niger* at Reading on 7th August 1959 (p. 23) came as no surprise to me, for on the same day I had noticed Starlings hawking "flying ants" over the town and had identified *L. niger* and *F. fusca* queens among the hundreds of winged ants that fell in the streets of the shopping centre. Miss Lyddon's observations on the first anting of the young Starlings with swarming ants are particularly interesting and informative. These birds were probably not very much more than one month old and must be among the very youngest ever recorded as anting, certainly among wild birds. We know that *experienced* birds will ant when the ants are not swarming and even

when they are in very small numbers (captive birds will ant with single ants given to them), but it begins to seem that many young birds of anting species, when in the innocent and exploratory stage of their development, as well as previously inexperienced adults, are especially likely to ant on encountering a swarm during the summer months. Subsequently, they may tend to ant again chiefly under circumstances similar to those of their first anting. Many records indicate that a good deal of anting occurs on the chance encounter of birds with ants, rather than by any premeditation on the bird's part. H. G. Hurrell's Blackbird, however, was clearly an individual with a regular anting habit and a regular anting spot. Just how common such persistent anting by the individual is, remains to be discovered.

Other points in these notes worth special mention include: (1) the exceptionally early anting of Starlings (Mrs. Colthurst, p. 24; W. A. Smallcombe) due to unseasonably warm weather making the ants prematurely active; (2) the squabbling of anting Starlings (Miss Butlin; G. Beven, p. 24); (3) the gaping of anting birds (Miss Butlin); (4) bathing following anting (Mrs. Burrington; Robert Gillmor); and (5) the non-anting of woodpeckers (Mrs. Burrington).

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Anting by some garden birds.—In our garden at Exeter, Devon, we have a crazy-stone pathway crossing a lawn and, for several years now, birds have been seen anting there. This is an annual event that we look out for in the later part of the summer (no actual dates noted before 1959), when ants swarm in thousands from under the path on warm still days, usually in the afternoon. Out of the forty-odd species of birds recorded in our garden, Starlings (*Sturnus vulgaris*), Chaffinches

(*Fringilla coelebs*), Song Thrushes (*Turdus philomelos*), Blackbirds (*T. merula*) and, once, a Robin (*Erithacus rubecula*) have been identified actually anting. The birds peck at the ants as these swarm out from between the stones and grass, tucking them into their wings and adopting the most grotesque attitudes as they do so. About three years ago we once had several large swarms at different points along the pathway and watched birds lining up and anting vigorously at each. There was also a small swarm near the house, where a Song Thrush came and anted only a few feet from where we were sitting at tea in our loggia. Having anted, some birds, especially Starlings, will fly to a bird-bath near-by and have a good splash—but this does not always happen. The Robin mentioned, unlike the other birds, seemed very half-hearted about its anting. The ants concerned are small and dark brown or blackish, hundreds of winged forms usually being present as well as workers. Green and Great Spotted Woodpeckers (*Picus viridis* and *Dendrocopos major*) eat the ants but have never been seen anting.

This year, 1959, I have kept a special watch for anting. To date (6th September) no large-scale swarming has been seen in the garden as it has in other years and, for the first time, the birds have anted when the ants were not actually swarming, apparently looking deliberately for the foraging workers. It was on 28th June that I saw the first bird, a Starling, perform; it did so three times though there were only a few stray ants on the path. On 2nd July a pair of Starlings came to the same spot with two young ones. The parent birds anted for some minutes and seemed almost to be instructing the young ones which looked on but did not ant. Immediately after anting, the adults flew to the bird-bath and bathed vigorously. A male Blackbird and his mate also came to the same place next day and anted very thoroughly. This pair has brought up several families in a cypress tree in the garden. The male is very old and at this time looked very dilapidated with no feathers on his head and with drooping wings. The female was in much better condition. I watched them for the 15 minutes that they anted. The male went over every feather, first of the wings and then of the tail. To get at the latter he contorted himself into ludicrous shapes and finally found himself standing on his tail so that, like a woman standing on the train of her dress, he could not straighten up, almost falling over backwards. Both birds bathed afterwards. My husband has since seen a very similar performance at the same spot, this Blackbird also bathing immediately after.

More briefly, the other anting records for 1959 are as follows. On 8th July a Blackbird and two Starlings anted in the afternoon (a very warm day) and a Blackbird and three Starlings in the evening. On 10th July three Starlings anted intensely, apparently searching for

these insects over a patch of the lawn and even scratching the surface to disturb them; a Blackbird also anted. On 21st July several Starlings, Blackbirds and a Song Thrush were seen anting at the same time. On the last date, when my daughter and I were watching together, a House Sparrow (*Passer domesticus*) and a Dunnock (*Prunella modularis*) were also present while the other birds were anting. Both these were observed to squat down and spread their wings and tails, dragging the latter along the ground where the ants usually are. Both also preened immediately afterwards, while still on the ground, but neither picked up ants and placed them under its wings as the other birds were doing. All this took place very quickly and it was hard to be sure what exactly happened. I am therefore uncertain whether or not these birds were actually engaged in a form of anting.

A. L. BURRINGTON

Anting by Blue Tits.—On 17th September 1957 I watched the anting of two Blue Tits (*Parus caeruleus*) in the grounds of Kelling Hospital, near Holt, Norfolk. At 8 a.m., from my bed on the ground floor, I was looking at the usual garden birds on the lawn and flower-beds adjoining, when a single Blue Tit alighted on a concrete path where I had previously noticed ants going in and out of a crack. The bird began anting and from behind cover, at the close quarters of between four and six feet, I was able to see what happened.

The bird would pick up an ant in its bill very quickly, at the same time depressing its tail and extending one wing to the fullest degree. Then, with a flick of the head it would vigorously insert the ant into the feathers of its underwing and upper flank. Every ant picked up was placed under each wing alternately—first the left, then the right, and so on. The bird's actions were performed at great speed, giving the impression of a dancing display. After about 2-3 minutes of this continual behaviour, the first Blue Tit was joined by a second which immediately began anting in exactly the same way. Both birds several times dropped ants (always dead ones) from their plumage. These were immediately picked up and eaten, not placed among the feathers again. A further one and a half minutes elapsed and by this time the path was clear of ants. Both birds then flew away into a cherry tree where they were lost to sight.

During 1950 my son Norman and I also saw anting behaviour by Blue Tits at close quarters on the wide grass verge of the herbaceous border in Kensington Gardens, Lowestoft, Suffolk. The performance of these birds was identical to that of the Norfolk birds mentioned above. The Blue Tit is not listed as an anting species by K. E. L. Simmons (*Brit. Birds*, 50: 401-424).

F. E. MUDDERMAN

Passive-anting by a Mistle Thrush.—On 19th July 1957, at about 1 p.m. (B.S.T.), whilst motoring in a country road near Hay, Brecon, a friend and I observed a Mistle Thrush (*Turdus viscivorus*) in the grit at the edge of the road. We drew up within twelve feet of the bird which was crouching with its back towards us, wings and tail spread and pressed to the ground, in the position shown in Fig. 8 of the paper by K. E. L. Simmons (*Brit. Birds*, 50: 411). It was also picking ants from the ground and putting them into its feathers. We could clearly see the ants in the bird's bill and also running over its back. We could not determine if the ants were eaten or discarded after use. The performance continued, with shufflings and changes of posture, for approximately 20 minutes. Once the bird left the ants and crossed to the grass verge on the other side of the road, but it returned almost immediately and continued as before. Eventually it flew over the hedge out of sight and did not return during the half-hour or so we remained.

We later examined the spot and found ants in numbers at the edge of the road and on the grass verge. We are not entomologists and could not determine the species—they appeared to be ordinary, small brown ants. They were definitely not Wood Ants (*Formica rufa*). The weather was hot, with bright sun alternating with heavy thunderstorms, but there was no rain while we were watching. It would appear that this is the first record of anting by a Mistle Thrush in Great Britain.

B. M. ATKEY

Anting by a Song Thrush.—In *British Birds* in 1952 (45: 77) an observation of mine on anting by a Song Thrush (*Turdus philomelos*) was briefly mentioned in the "Supplementary Notes". The details of this record are as follows. I saw the bird on 26th June 1950, at Iwerne Minster, Dorset. The weather had been hot and dry for several days previously. The thrush was picking objects off the ground and placing them under its fluffed feathers and under outstretched wings and tail. It was apparently very intent on its activity, for it did not move until I was only a few feet from it. Before it flew away I could see ants moving about in the grass and examination of the spot on which it had actually been standing revealed an ants' nest with a large number of ants running about outside it. I made a sketch of the bird's position soon after I first saw it: this shows it half-squatting down with both wings partly open and the tail spread. From memory the ants were small and blackish, probably *Lasius niger*.

A. K. KENT

Passive-anting by a Blackbird.—On 14th July 1954 I watched a male Blackbird (*Turdus merula*) anting in our garden at Hythe, Kent. I had been working in the potatoes and the bird, a very tame one which

knew me well, was accompanying me. It discovered an ants' nest in a potato ridge by accident and began scratching and pecking into the heap, picking up and eating several ants in succession and then placing one or more under either wing. Again and again this was done, head and beak being buried momentarily under one wing which was then closed against the body with such force that the bird—standing as it was on a shifting foundation—frequently lost its balance and fell on the ant heap. Then, its hunger appeased, the bird stepped into the crater it had formed, sank vent and belly into the moving mass of ants and spread out its wings so that the ants crept upwards through the feathers and on to its back.

I was able to watch the whole action at a distance of about twelve feet. After at least five minutes, probably ten or more, I hurried off to the house for my camera but the bird had gone when I returned. The ants were small and red.

W. S. NEVIN

Anting by Blackbirds, Starlings and Chaffinch.—For several summers I have looked out for anting in our small garden at Luton, Bedfordshire, as there are always a few nests of ants in the edge of one border. In general, I have found that the birds here do not like to eat the worker ants though House Sparrows (*Passer domesticus*) do sometimes take a few and tits (*Parus* spp.) will pick them off the shrubs and as they run up the fruit trees. One tame Robin (*Erithacus rubecula*) will come and eat most of the creatures I put in a tin while digging, but it leaves the ants untouched. However, when the ants swarm for their "marriage flight" and rush all over the path (usually in August, though I have not kept a record of dates), some birds come and do their anting. The more the ants pour out, the better they seem to perform.

In 1955 I saw Blackbirds (*Turdus merula*) anting and reported this to the Bedfordshire Natural History Society (*Bedfordshire Naturalist* for 1955: 25), but it was in 1956 that I had the best period of watching. One day two very young Starlings (*Sturnus vulgaris*), not long out of the nest, were on the lawn. The ants had only started to swarm that day—in fact, that very afternoon—and, as the Starlings worked their way towards the path, two Blackbirds had already found them and were anting. These flew away and the young Starlings, running after their parents and begging for food though they could pick up things for themselves as well, saw the ants, ran into the swarm and started anting. They obviously did not need to be taught but knew exactly what to do. They seemed to pick up ants one at a time and poke them among their feathers—apparently under the wings and tail and down the breast, though I can never make out just what anting birds really do. They were so active and clumsy that they could hardly

keep on their feet, working at a terrific rate for 2-3 minutes until exhausted, and then floundering about among the plants in the border. Suddenly they stopped, looked about them and ran off towards their parents which had already flown on to the fence. In 1957, when a new path was put down and the ants disturbed, I saw no anting. 1958 was so wet that the ants (back again at the old place) were late in swarming; but when they did emerge in good numbers I saw Blackbirds, Starlings and a male Chaffinch (*Fringilla coelebs*) anting.

This year, 1959, I have seen no anting at all to date (28th August) though I have kept a careful look-out from July onwards. On 18th July, some worker ants of the usual blackish species were running about at one spot and next morning there was a small swarming there, with a few winged ants present. In the afternoon, I put some food near the place, but the only birds that came close were two House Sparrows which picked up some of the winged ants. On 25th July I found a little nest of very small ants of a species that I had not seen before in the garden. This was under a water bowl put out for the birds. There were several rather small, lightish brown winged ones present and lots of tiny, bright orange workers. They all ran about and I stirred them up but, again, only some House Sparrows came. These picked up the winged ants and I saw one bird slightly flutter its wings among them—but there was no typical anting. After heavy rain on 26th July I saw no more ants.

MARY E. LYDDON

Anting by Blackbirds and Starlings with the ant *Lasius niger*.—On 22nd July 1956 I saw a cock Blackbird (*Turdus merula*) anting on short grass by the side of a path near my house at Wrangaton, South Devon, and he applied several ants before being disturbed by my approach. I went up to the spot and was able to identify the ants concerned as workers of the species *Lasius niger*. When I returned ten minutes later, the bird was back and anting again.

In the summer of 1958 a particularly tame cock Blackbird often anted just outside our sitting room window on short grass. This bird was watched on a dozen or more occasions, mainly in August but also in July and September. He always performed at the same spot, for several minutes on end. Once or twice I checked on the species of ant and again found *Lasius niger* running about where the Blackbird had been. This same ant was also identified on the grass at Peverell, Plymouth, where Starlings (*Sturnus vulgaris*) had been seen anting on at least three occasions in 1958.

H. G. HURRELL

Anting by Blackbird and Starlings at mounds of the ant *Lasius flavus*.—On at least five dates I have seen birds anting at ant-hills in the garden of my home near Stonehouse, Gloucestershire. These are

permanent heaps with grass growing over them and the ants inhabiting them are the small yellow *Lasius flavus*. Anting has also been suspected on other occasions when it has not been possible for me to watch carefully.

Blackbirds (*Turdus merula*) have been seen to visit the heaps many times to feed on the ants or pupae. On 16th June 1953 a male Blackbird was watched at a range of 16 yards for a quarter of an hour, apparently passive-anting, a form of anting not recorded for this species (*Brit. Birds*, 50: 414). First it pecked a few times at the ant-hill, then lay down and several times screwed itself round in half-circles (or nearly so) before lying still for some seconds with its tail partly spread and bill raised. As the ants began to run, it pecked rapidly round the heap but no extreme posturing took place. (Unfortunately, I made no note at the time of the position of the bird's wings; so far as I can remember they were held loosely away from its sides—certainly not widely spread.) This performance was repeated five or six times before the bird went on to another ant-hill. It energetically removed a number of long pieces of hay before settling down.

On 23rd April 1959, at a range of 30 yards, I watched a pair of Starlings (*Sturnus vulgaris*) anting from 11.40 to 11.55 a.m. The birds were already at the heap when observations started. They stood on the ant-hill, or sometimes at the foot of it, and picked up ants with rapid movements, then swept them down their primaries, as if preening, with the wing brought forward in the usual attitude of active-anting. This was repeated time and time again, sometimes with slight shufflings of the wings as though the birds were shaking after bathing. Once, after apparently picking up an ant, one Starling jabbed at the root of its partly spread tail, and several times both seemed to apply ants under their wings. On three occasions a bird gaped widely, twice for as long as approximately five seconds. This was not gasping as in a sun-bathing bird, but as though its mouth were uncomfortably hot. Its bill was in a horizontal position, then held downwards (still open) just before it collected its next batch of ants: the ball of ants could be seen in its beak. During this time the pair moved to two other ant-hills within a few yards of the first and the female returned to her nest but rejoined her mate almost immediately.

On 24th June 1959 communal anting was watched: at first only four Starlings were involved, but these were joined by others until there were eleven (including one juvenile). As the numbers grew there was more and more squabbling as the birds tried to get on the heap together. The obvious excitement and rapid preenings of the adults seemed to infect the juvenile, for it briskly pecked at the ants, but it did not posture or apply them to its plumage. Its occasional

begging for food was ignored. The adults performed the usual anting movements, collecting the ants in the bill, then posturing with one wing brought forward as though to preen and (sometimes) the tail partly spread and twisted forward to the same side. Then they would sweep the bill down the primaries. One bird was watched 8-9 times apparently applying ants to each wing alternately (except for one double application to one side); another was seen to leave the group for several seconds, gaping widely. Further anting was noted twice in the day following, in both the morning and afternoon, when a flock of 15-20 Starlings, including at least one juvenile, gathered on five or six heaps. The birds bickered frequently and the typical "ant-preening" motions were observed, but no gaping was noticed. The juvenile was not certainly seen to ant. Anting was not observed again until 19th July when six adult Starlings gathered on a small heap at 6.50 p.m. I watched them from the house with binoculars for five minutes until something disturbed them. During this time, none of the birds was noticed gaping.

On no occasion that the birds were anting at these mounds were the ants swarming. At the times of the performances by the Blackbird (June 1953) and the resident pair of Starlings (April 1959) all the heaps were in their natural state; but some ten days before the communal anting in June 1959 about six of the bigger hills had been split open and left with the turfs turned back, ready for levelling. Nevertheless, by the date of the first observation the ants were underground again and in any case the Starlings performed on both disturbed and undisturbed heaps equally: in fact, some of the most intense activity occurred at a good-sized intact one, though the first four birds began anting on an opened heap.

Since 19th July I have seen no more anting to date (25th August), though the Starlings are still about and often perch on the cables above the ant-hills. The grass has grown up rather long now but the larger heaps are quite exposed. Some of the ants have been swarming, but this did not cause any further interesting bird activity.

SYBIL M. BUTLIN

Starlings anting with the ants *Lasius niger* and *flavus*.—The first day of March 1959 was rather like a summer's day; in fact it was one day of several which formed an unusual spell of false spring weather. Looking through the window towards the lawn in the front of my house near Reading, Berkshire, I saw an adult Starling (*Sturnus vulgaris*) at the base of a cherry tree, about eight paces away. The bird was actively pecking among the grass. After each peck it extended a wing outwards and forwards—sometimes the left and sometimes the right—and proceeded to stroke or preen the underside of a primary with

the tip of its beak. The stroke started, I should say, about $1\frac{1}{2}$ inches from the end of the feather and moved quickly along to the tip. This action was repeated many times, in the sequence of peck and then preen. Very occasionally the bird preened under its tail. After it had flown away—having been there for a matter of five minutes—I carefully examined the area where it had been active. Crawling on and among the blades of grass were a few workers of *Lasius niger*, rather lethargic but certainly foraging, no doubt owing to the warm weather. My wife saw all the foregoing with me.

In the late autumn of 1958, I observed on the same lawn four immature Starlings actively quartering the ground and also performing anting movements similar to those described above. Examining the ants there and then, I found that they were workers of *Lasius flavus*. This is usually an underground species, but I was aware that there were several incipient colonies upon my lawn, having frequently disturbed the earth mounds they were attempting to build. On this occasion the rather vigorous pecking of the ground by these particular birds had probably induced the ants to appear, as this species does not normally forage in the open. The ants were *not* swarming at the time.

W. A. SMALLCOMBE

Starling anting with the ant *Lasius niger*.—On 7th August 1959, in my garden at Reading, Berkshire, an adult Starling (*Sturnus vulgaris*) was anting with workers of *Lasius niger*. It was a warm and sunny afternoon, about 2.15 p.m., and for a short period the ants swarmed out along the border of a lawn and a concrete terrace. Although there was not a very large number, they were restricted to a small area and in greater concentration than usual. I have on a number of occasions, with K. E. L. Simmons, watched Starlings anting in this garden in artificially introduced heaps of Wood Ants (*Formica rufa*); in fact, we had seen this only two days earlier at the same spot. The difference in the intensity of anting was immediately noticed. With the Wood Ants the Starlings had anted fast and continuously, but this single bird was almost casual in the way it picked up one or two of the insects and anted whilst it was searching for food along the edge of the lawn. It had already started anting when I first noticed it and, judging by the dead or maimed ants on the concrete (including one "ball" of about three), it had probably been doing so for some time. It anted once on the lawn, picking ants off the concrete, on to which it then hopped and anted again. It returned to the lawn and then flew to the bird-bath for a thorough bathe before finally flying off. I believe that the bird chanced on the ants quite accidentally and did not come down to them deliberately. However, about ten minutes later a Starling (almost certainly the same bird) came to the spot from

the lawn, looked around and then left without anting. By this time there were no ants on the concrete, but still some on the lawn.

ROBERT GILLMOR

Anting by Starlings in February.—On 16th February 1958, when the sun was bright and the temperature well up in the fifties, a party of eight Starlings (*Sturnus vulgaris*) discovered that ants were moving on our lawn at Bridgwater, Somerset. My eye was caught by the curious gait of the birds. Instead of running eagerly with heads forward and tails nearly level, they were strutting along with very short steps, their bodies held in a stiff upright position and the tips of their tail-feathers dragging on the grass. Any ant picked up was immediately tucked under a wing—left, right, left, alternately (I took particular notice of this)—and the wings were then held hard to the body giving the birds a slim and tidy look, most unusual for a Starling. The ants seemed to be put among the body-feathers close up under the wings which were raised slightly to receive them. Once or twice I had the impression that a bird had rubbed the insect along the inner side of the leading edge of one wing, but the movement was so quick it was difficult to be sure. At the end of ten minutes or so, five birds had resumed feeding and three were still anting. Then the bang of a neighbour's door sent them all up into a hawthorn thicket and, although I kept frequent watch during the remainder of that day and the next, I did not see any repetition of this curious and rather comical behaviour.

M. L. COLTHURST

Anting by Starlings.—On 4th July 1957 I saw a Starling (*Sturnus vulgaris*) anting on the lawn of a garden at Teddington, Middlesex. I was not close enough to see the ants, but the bird appeared to pick them up and put them under its wings and under its spread tail. There was a second Starling present and both showed great excitement. The anting bird would repeatedly drive off the other, but I think that this one, too, managed to do some anting, although not at the same time. There were a few small, reddish ants on the spot (species unknown).

G. BEVEN

Anting by Starlings.—On 22nd June 1954, in Southport, Lancashire, where the soil is sandy and much frequented by ants, I saw four Starlings (*Sturnus vulgaris*) feeding on the lawn in the ordinary, busy, preoccupied way characteristic of these birds. Suddenly they came across a colony of ants in the grass. Their manner at once became extremely excited and, in great haste, they began to pick up the ants, apparently placing them under their wings. They assumed strange attitudes with one wing extended in a crippled sort of way. The whole



PLATE 1. Adult Lammergeier (*Gypaetus barbatus*) at the edge of its stick-and-wool nest in a small mountain cave, Spain, June 1959 (pages 25-29) (Eric Hosking)

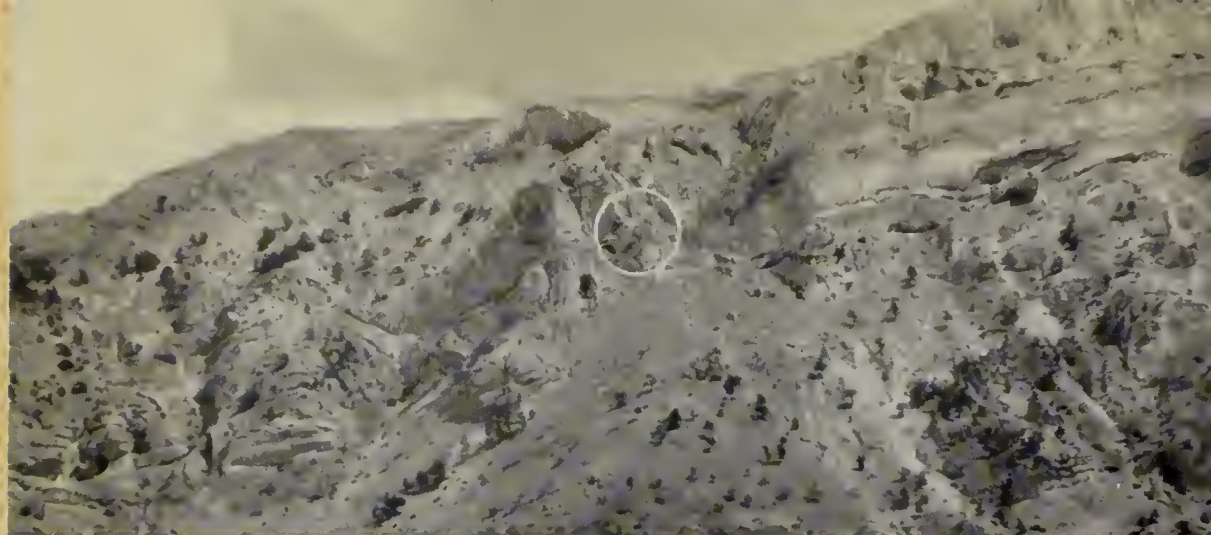




PLATE 3 (*above*). The cave at the top centre holds the nest of the Lammergeier (*Gypaëtus barbatus*); nearly 30 feet below, from a ledge some 160 feet up the cliff, climbers start the final assault (*Eric Hosking*)

PLATE 2 (*left*). The top two pictures show the position of the cave-nest in plates 1, 3 and 4, with the photographer's hide 150 feet away to the left (*Eric Hosking*). The bottom photograph indicates the site of the ledge-nest in plate 5 (*Antonio Cano*)



PLATE 4. Lammergeier (*Gypaëtus barbatus*) at nest, Spain, June 1959. The ten-weeks-old youngster below watches a piece of wool brought by the adult. The old bird is dark brown on the back, wings and tail, with a creamy-buff head and neck and a vivid orange breast (page 29); the striking yellow eye stands out (*Eric Hosking*)





PLATE 5. Adult Lammergeier (*Gypaetus barbatus*) with young over three months old, Spain, June 1958. The latter left the nest next day. The long black bristles hanging down on either side of the bill give the bird its other name of Bearded Vulture. The pattern of black on the head is well shown below (*Antonio Cano*)





PLATE 6A. The young Lammergeier (*Gypaetus barbatus*) has been brought down, with the aid of ropes and wire-ladders, to the ledge below the cave-nest (plate 3). Here the remaining close-up photographs were obtained (*Eric Hosking*)



PLATE 6B. The size of the young bird's gape is dramatically shown here. The most colourful part of the dark brown nestling was the circle of bright orange round the chestnut iris (page 28); the bare skin of the face was bluish-grey tinged with violet (*Antonio Cano*)



PLATE 7. The eight-weeks-old young Lammergeier (*Gypaetus barbatus*) being held by Antonio Cano. This gives a good impression of its size—already $2\frac{1}{2}$ feet long with a wing-span of over 6 feet and a weight estimated at 15 pounds. The remnants of a thick down remain on the neck, wings and under-parts (*Eric Hosking*)



PLATE 8. Close-ups of the beak and foot of the young Lammergeier (*Gypaëtus barbatus*), and (*below*) fully grown and ready to leave the nest, the diamond-shaped tail already developed. Note the hard gouge-shaped tongue which is thought to be used in extracting marrow from bones. The 3-inch hooked bill is greenish, the legs yellowish-white and the nails black (page 28) (Antonio Cano)



incident lasted only a very short time and I consider myself lucky to have witnessed it. I had heard of certain American birds being addicts to this strange habit, but had never myself seen anything of the kind before.

LILIAN HAMER

Mass anting of Starlings with swarming ants.—Adjoining my garden at Stanningfield, near Bury St. Edmunds, Suffolk, is an old, neglected churchyard which is thick with ant heaps. These mounds, substantial and permanent, are grown over with grass and inhabited by small, brownish ants. These seem normally to remain largely out of sight but on 6th August 1959 they were active on the surface and engaged in aerial fighting. Numbers of birds, including Starlings (*Sturnus vulgaris*), were catching the flying ants on the wing.

In the hot afternoon of that day, my attention was drawn by their noise to several of the local family parties of Starlings, some twenty to twenty-five birds, which were all actively engaged in anting. The flock was spread out on the heaps in a restricted area and the individuals, mainly birds of the year, were picking up beakfuls of ants and apparently rubbing them on the undersides of their half-opened wings. However, it was the continuous, excited, conversational chatter which struck me as the most remarkable feature of the gathering and this, with occasional noisy squabbling, continued throughout the hour or so that the birds were there. It was the same excitement that a flock of hungry Starlings exhibits in winter when some attractive food has been thrown to them. This makes me wonder if what one might call the social side of the anting habit has been referred to by other observers. I have not seen anting at this site before or since, though the ant heaps attract Green Woodpeckers (*Picus viridis*) quite a lot.

CHARLES G. YOUNG

Studies of less familiar birds

102. Lammergeier

By I. J. Ferguson-Lees

Photographs by Antonio Cano and Eric Hosking

(Plates 1-8)

IN SOUTHERN EUROPE there are four vultures—or perhaps one might call it three-and-a-half because the remarkable and spectacular Bearded Vulture or Lammergeier (*Gypaëtus barbatus*) is generally regarded as a link with the eagles. The very name “vulture” conjures up a vision of scrawny-necked, bald-faced monsters crowding round a rotting carcase, but the Lammergeier, though still a carrion-eater,

is a more solitary bird and far from hideous to look at. Col. R. Meinertzhagen (1959, *Pirates and Predators*) has written:

"The lammergeier combines extreme grace in flight, an almost regal appearance in his natural surroundings with a cowardice out of all proportion to his size . . . ready to take advantage of any animal in distress, incapable of defending himself against creatures half his own size and frightened at the wink of an eyelid. And yet this bird of despicable character is one of the finest exponents of flight and aerial grace in the kingdom of birds. His poise, his long pointed wings, his torpedo body and his long wedge-shaped tail contribute to give him a greater majesty than any of the true eagles . . . sinister, magnificent and dignified. Seen at close quarters I know no bird so impressive."

Impressive it certainly is and, even if it is not the bold and resolute devil that it has often been made out to be—it used to be credited with carrying off lambs and children, and even throwing climbers to their deaths—its cautiousness cannot detract from it. Indeed, throughout its range in southern Europe and the Atlas Mountains of north-west Africa, in eastern Africa and from Asia Minor through to the Himalayas and China, it will always provide a Mecca for ornithologists. This, if we need one, must be our excuse for beginning 1960 with a species never recorded in Britain.

Inevitably with such a bird, a vast literature has grown up through the years, a lot of it superficial, much of it fanciful and some of it clearly erroneous. Misinterpretations have been copied and exaggerated by author after author. As a result, probably few other species have such a conflicting background of muddled legend and fact, and it is difficult to separate the grain from the chaff. This account is therefore largely confined to our own observations in 1959, with some comparison with those of the late E. H. N. Lowther (*J. Bombay N.H.S.*, 46: 501-508) who was one of the few others to have photographed the Lammergeier at the nest.

In Europe, the Lammergeier is confined to Corsica, Sardinia, Sicily, the Balkans and three regions of Spain. In 1958 Antonio Cano and J. A. Valverde (*Ardeola*, 5: 121-126) found a nest in the sierras of south-eastern Spain and in 1959 invited ten of us to join them in the same mountain area. The 1958 nest was not occupied in 1959, but other pairs were located and on 18th May a Lammergeier was seen to fly into a small cave high on the side of a deep valley several miles long and over a mile wide (plate 2a). This nest proved to contain a single half-feathered youngster. In Europe the Lammergeier seems to lay one or two eggs. In India, according to Lowther, there is often only one, two is the usual and three is very rare, but no more than one young is normally reared. In Europe the nesting-season begins in December or January, but the young may not leave until June or July: some eight weeks of incubation are followed by three months or more in the nest.

In the Himalayas, Lammergeiers breed as low as 1,200 feet and at least as high as 14,000 feet (while a single bird has been seen at 24-25,000 feet on Mount Everest). Our site was at about 5,600 feet, and roughly fifteen hundred feet above the floor of the valley. Most of the drop below was a steep grass-covered rocky slope dotted with pines and various shrubs like *Berberis hispanica*, but the 190 feet under the nest was sheer limestone cliff. The site was more accessible than most: it was easy enough to reach a narrow grassy ledge 30 feet below the cave (plate 3) and from this, with the aid of pitons, ropes and ladders, the nest itself was entered by Cano, Valverde and George Shannon on 19th May. As plates 1 and 4 show, the structure was tucked well into the cave and this is not uncommon; even if there is no cave it is usually sheltered under an overhang (plate 5).

The cave was nearly 5 feet deep, but only about 3 feet 8 inches high above the nest. The entrance was under 6 feet wide—so that the adult Lammergeier, with its huge wing-span of $8\frac{1}{2}$ to 9 feet, had to swoop in on half-closed wings. The nest itself was composed entirely of branches of pine (*Pinus nigra*), oak (*Quercus* spp.) and juniper (*Juniperus communis* and *oxycedrus*) between 16 and 32 inches long, with a thick lining, about a yard across, of pure sheep's wool. There were only a few sticks against the wall of the cave, but the branches were piled more than a yard high on the outside edge, doubtless as levelling. Lowther described the nest in the Himalayas as "a huge pile of sticks, branches, grass, wool, skins, bones or rags" and he also found a large piece of sacking and bits of green bottles, but the only other things in our nest were a few feathers from the adult, a scattering of food and an old rope sandal. The food included two hind legs of sheep with skin and flesh, one fresh and the other less so; 8 old hooves and a freshly regurgitated one of sheep or ibex, as well as an upper mandible and a scapula; the hoof of a donkey; the skull of a dog; and one or two unidentified bones. Eight feet below this nest was an old one in a similar but smaller recess about 3 feet wide and high and 4 feet deep. This was also built up with sticks on the outside edge, but very little wool remained. Two sticks in this were over 3 feet long and $1-1\frac{1}{4}$ inches thick.

The youngster was lowered in a sack to the ledge below and there examined and photographed (plates 6-8). About two months old, it was able to stand and walk, and probably to eat by itself. The feathers were various shades of dark brown, more reddish below, and extended down the tarsus (plate 7). It would be out of place here to give the full measurements and description, but some account of the soft parts may be of interest. The inside of the mouth was bluish-pink with the distal part yellowish and rough; the gape and the bare skin of the face were bluish-grey tinged with some violet. This

bluishness extended to the base of the bill which was otherwise yellowish-green with the tip blackish (plate 8a). The iris was pale chestnut and the "white" of the eye a vivid orange (plate 6b). Yellowish-white legs were tinged with green and the nails were black (plate 8b). The huge gape is well illustrated in plate 6b: over $3\frac{1}{2}$ inches (92 mm.) from tip to base and nearly $2\frac{3}{4}$ inches (67 mm.) wide. The whole head from nape to tip of bill was almost 6 inches (148 mm.).

Note particularly the hard gouge-shaped tongue on plate 8a, which is probably an adaptation for extracting marrow from bones. There are a number of reasonably well-authenticated cases of Lammergeiers killing wounded animals, but it is primarily a carrion and offal feeder, in the Himalayas even being seen on the rubbish-dumps of the hill-stations. Lowther wrote:

"It does not . . . fight with other vultures for the tit-bits of a carcase; instead, should it visit one while the filthy meal is in progress, the *lámmergeier* stands by, looking on till the other vultures have left—and they do not depart until the carcase is cleaned—when it sets about the blood-covered bones of the dead animal, an incident witnessed by a number of observers including myself."

Its Spanish name is *quebrantahúesos* or "bone-breaker", arising from its celebrated habit of carrying large bones high into the air and dropping them to smash on flat bare rock below, so that the marrow (or brains from a skull) can be extracted. This act has seldom been seen by any but the people of the mountains, but Willoughby Verner saw it, and described and illustrated it in his *My Life among the Wild Birds in Spain* (1909), and M. E. W. North (*Ibis*, 90: 138-141) quoted R. E. Moreau on an ossuary in Kenya:

"Over an area of some forty yards each way the bare rock was littered with white splinters of bone. In hollows they lay in drifts. I could have collected a dozen pailfuls. . . . A few jaw-bones were present, including those of hyrax, klipspringer and reed-buck. This may mean that the skulls had been dropped, which would give access to the brain. Most of the fragments seemed to belong to limb-bones. . . . About $2\frac{1}{2}$ inches was about the biggest diameter indicated."

Meinertzhagen regards the purposeful smashing of bones by this means as still unproven, suggesting that it happens sometimes by accident and that the Kenya ossuary may have been the work of porcupines. Certainly it can be no more than a side-line.

Cano got his photographs in 1958 (plates 5 and 2c) from a hide on a platform only ten feet away. In 1959, however, the photographs on plates 1 and 4 had to be obtained with a 600 mm. lens from the huge distance of 150 feet (plate 2b). This was on 2nd June, so that the nestling was a fortnight older than in plates 6 and 7. In the 11 hours Eric Hosking was in the hide, from 08.10 to 19.12, there were five visits by one of the parents—at 08.45 (40 seconds), 10.40 (20 minutes), 12.55 (17 minutes), 14.46 (6 minutes) and 17.10 (20 minutes). The last visit ended when the second adult arrived, the only time the pair was

at the nest: the first bird at once flew off with a piece of wool and the newcomer followed. The youngster at Lowther's nest was smaller, about 4-6 weeks when he paid the first of his visits spread over 3 weeks. His bird was occasionally fed twice in half an hour, but the interval was generally $1\frac{1}{2}$ - $2\frac{1}{2}$ hours with the adult staying 8-15 minutes. It is also interesting to note that at Lowther's nest the rather younger chick was fed partly on regurgitated food, as in the true vultures, whereas Hosking saw no sign of this. In fact, apart from what seemed to be a piece of wool, the 1959 adult brought food only twice, each time in its left foot, and only on the three longest visits was the chick fed. The last time, after picking off morsels for the young and eating quite a lot itself, the old bird finally held the food in front of the nestling until it grabbed it and swallowed it whole. The food appeared to be red meat, but at Cano's 1958 nest sheep and ibex bones (scapulae, femur) and dry dead rats were brought.

The adult is briefly described on plates 4 and 5, and these and plate 1 give the main features well: the black patches extending forwards and downwards in thick bristles like a beard; the dark brown to grey upper-parts with light feather-shafts; the feathered and immensely powerful-looking legs; and the fierce effect of the striking yellow eyes. Many writers have called the under-parts buff or rusty, but in old birds the breast is a deep orange becoming paler on the belly and legs. This colour is conspicuous in flight, contrasting with the dark underwings. In the air, 4 feet long and up to 9 across, it is a monster dragon; its long, narrow, angled wings and long diamond-shaped tail give an impression of dash more like an outsize falcon. Head on, the wings show as arcs with the carpals raised and tips down, the whole effect like an unstrung bow—a striking outline set off by the pale head's contrast with the dark back and a variable black gorget. It hardly moves its wings, just occasionally giving one huge and powerful flap which brings the tips down below the body and seemingly almost touching. The young birds are dark brown (plate 8c) and, according to Lowther, do not assume adult plumage until about 5 years old.

Notes

Wilson's Phalarope in Flintshire.—At 11.30 a.m. on 30th August 1959 I saw a phalarope on a small marsh pool in the upper reaches of the Dee estuary on the Flintshire side. It was at first wading deep in the water, but as it approached the edge of the pool I noticed that it had pale straw-coloured legs, a long thin black needle-like bill, a smallish head and an elongated neck. It was about the same size as a Green Sandpiper (*Tringa ochropus*) which was present near-by.

From previous experiences in Anglesey in 1958 (*Brit. Birds*, 52: 386-387) I suspected Wilson's Phalarope (*Phalaropus tricolor*), but unlike the Anglesey bird this one was in winter plumage. Confirmation of identity came when the bird flew low over the pool, showing white rump and tail (the latter finely streaked grey) and uniform wings without any white bars—basic characters of this species of phalarope at all seasons.

The whole of the plumage, with the exception of dark primaries and some wing-coverts, was strikingly very pale, the throat, breast and under-parts being pure snow-white. The head and neck were white except for a small dark patch behind the eye, grey on the crown, and a grey mottled line down the side of the neck from the eye to the scapulars. The mantle was grey with darker wing-coverts edged pale buff, giving a patterned effect.

During three periods of watching throughout the day, totalling $3\frac{1}{2}$ hours, the phalarope associated closely with a Ruff (*Philomachus pugnax*). Its method of feeding was chiefly by wading deeply, dipping the bill and head down into the water at the same time bobbing up the tail. It was also often seen swimming with backward and forward movements of the head like a Moorhen (*Gallinula chloropus*), dabbling on every side to pick insects off the surface. Only on one occasion was it seen to spin when at least twelve turns were completed. It occasionally left the water to preen on a mudbank, when a rotundness of form was noted in contrast to its elegance on the water.

The bird was seen later in the day by Dr. W. Craggs, W. Mulligan, N. F. Ellison and J. C. Gittins, and by several other observers up to 4th September.

JOHN P. WILKINSON

Wilson's Phalarope in Northamptonshire.—On 8th September 1959, at Pitsford Reservoir, Northamptonshire, J.R.B. noticed a wader of small to medium size and very pale in appearance which was quite unfamiliar to him. Only a long range view was then possible and the outstanding features were the pure white under-parts and the very pale head. In flight the wing and tail-pattern was reminiscent of that of a Wood Sandpiper (*Tringa glareola*), i.e., with white rump or tail and uniform wing with no white bar. Later the same day the bird was seen by J.R.B., G.E.D., M.G. and L. S. Taylor, again at fairly long range and the impression gained was of a *Tringa* sandpiper like a miniature Greenshank (*T. nebularia*) with a fine, longish bill. It seems worth mentioning that these first general impressions led us to think that the bird might be a Marsh Sandpiper (*T. stagnatilis*). However, the possibility of a Wilson's Phalarope (*Phalaropus tricolor*) was realised later after reference to *A Field Guide to the Birds* (of North America) by R. T. Peterson. During the following four days it was confirmed

that the bird was in fact a Wilson's Phalarope by the observations of about 15 people including I. J. Ferguson-Lees, G. des Forges and C. W. G. Paulson-Ellis. It was last seen on 12th September.

During its stay the bird was usually found feeding on the muddy margin of a main inlet bay, seldom alone but almost always near Greenshanks and Lapwings (*Vanellus vanellus*) although not appearing to consort with any one species in particular. Each time observers approached the area, Teal (*Anas crecca*) and gulls were usually present and when these were disturbed all the waders including the Wilson's Phalarope would fly off with them, often out of sight. Hence it was never possible to obtain really close views of the bird although it was seen on one occasion at a range of about 30 yards by G.E.D. The following description therefore lacks the finer details of plumage:

General appearance slender and very pale with whitish head and white under-parts, rather long thin neck and small head. Based on comparisons in the field with Greenshank and Snipe (*Capella gallinago*), estimates of size varied from that of a Green Sandpiper (*T. ochropus*) to that of a small Reeve (*Philomachus pugnax*). Bill black, straight, quite fine and about $1\frac{1}{4}$ times length of head. Head and neck whitish except for grey on crown and nape and an indistinct dark mark from eye backwards and downwards, more or less joining grey on back of neck, thus leaving whitish forehead and stripe above eye. Whole of under-parts pure white except for faint wash at sides of upper breast. Back and wings brownish-grey appearing uniform except for darker primaries, general colour being rather paler than in Greenshank. White of rump not extending up back as in Greenshank but starting level with trailing edge of wings (in flight). Tail white with some indistinct colouring at tip. Underwing whitish. Legs black or certainly very dark, of medium length for a wader, toes projecting slightly beyond tail in flight.

At all times the bird was on the move and when feeding walked very briskly either with its neck stretched upwards and forwards at an angle or with its head lowered, legs well flexed and rear end tilted upwards. This latter action was not unlike that of a Water Rail (*Rallus aquaticus*) hurrying for cover. The feeding action was one of picking from the surface of the mud, never apparently probing, with the head turning quickly from side to side whilst the bird frequently changed direction in its course. It was seen swimming on only two occasions but not spinning and dabbling like other phalaropes. Even so, something of the typical "jizz" of a phalarope was at times recognised when the bird was on the ground. In flight the head and body appeared short and compact in comparison with, for example, the more rakish Greenshank. In short and leisurely flights, when the bird was not unduly disturbed, the wing-beats were shallow, but when the bird was flying away at a fair height the wing-beats were much deeper and quicker. Then, except for the whitish head, it bore a resemblance to a Wood Sandpiper, particularly as in some lights the wings and

upper parts appeared rather browner. On no occasion were any calls heard. J. R. BECK, G. E. DUNMORE and M. GOODMAN

[We have also received a description of the Flintshire bird from Dr. R. J. H. Raines. These two observations make the fourth and fifth British records of this North American wader. Although the dates did not overlap, two separate individuals must have been involved because one had dull yellowish and the other blackish legs. The Northamptonshire bird was probably a female: it seemed larger than my recollection of the one in Fife in 1954 (*Brit. Birds*, 48: 15-17) and was of a similar size to the Bedfordshire one of 1958 which was certainly a female (52: 385-386).—I.J.F.-L.]

Bridled Tern in Somerset.—On 17th October 1958 a freshly dead Bridled Tern (*Sterna anaethetus*) was found on the tide line at Sand Bay near Weston-super-Mare, Somerset. The remains were sent to the British Museum (Natural History) where the identification was confirmed. Unfortunately, by the time the bird reached London its condition was too poor for it to be decided whether it was of the typical race or the Caribbean form (*S. a. recognita*). Both wings and tail were in moult, and the plumage seemed to be adult apart from buff tips to some mantle feathers. The remains were injected with formalin and are now in my possession. This is the first record for Somerset and the fourth for the British Isles. M. A. WRIGHT

[It is perhaps of interest to add that all the three previous Bridled Terns found in the British Isles have been picked up dead. Apart from the record detailed in *The Handbook*, two others were found on the coasts of Dublin and Glamorgan in November 1953 and September 1954 respectively (*Brit. Birds*, 48: 89-90).—EDS.]

Blackbird taking Common Lizard.—On 29th June 1959, at Saltdean Vale, near Brighton, Sussex, in a place where Common Lizards (*Lacerta vivipara*) abound, I saw a first-year male Blackbird (*Turdus merula*) take one, kill it and carry it off to a bush. There are earlier records in *British Birds* (37: 116, 157; 38: 237; 45: 77) of Blackbirds taking Slow-worm (*Anguis fragilis*), mouse (? species), Common Newt (*Triton vulgaris*) and Common Eel (*Anguilla anguilla*), and also attacking a small Grass Snake (*Natrix natrix*), but I can find no previous case of one preying on a lizard, though doubtless this happens often enough when the opportunity arises. GORDON N. SLYFIELD

Flycatching by a flock of Meadow Pipits.—On 27th March 1959, at Beddington sewage farm, Surrey, I watched a flock of about 50

Meadow Pipits (*Anthus pratensis*) flycatching from a wire fence for some 25 minutes. The fence ran beside a shallow dyke which divided two flooded grass meadows and the birds were continually flying out over these, hovering and chasing flies. Only rarely after one of these flights did a bird drop to the ground: usually each one returned to its position on the fence. The sun was occasionally obscured by small patches of cloud and the birds then became far less active: I noticed that the flies were more visible in sunlight and presumably this was the reason. The birds were finally disturbed when a flock of Starlings (*Sturnus vulgaris*) took possession of the wires. R. E. SCOTT

Starlings affected by smog.—With reference to the note by Mr. W. M. Peet on Starlings (*Sturnus vulgaris*) affected by smog (*Brit. Birds*, 52: 238), it is interesting to remark that a similar phenomenon occurred in Bishop's Stortford, Hertfordshire, on three separate occasions in January 1958. The main "wreck" took place on the evening of 18th January—a night when thick fog hung low over the area—and about one hundred corpses were counted next morning along a mile of the main London road (A11). During the night several people observed a large flock of Starlings wheeling in the fog above the street lamps, and some actually saw birds falling to the ground as if they had "dropped dead in flight". Most of the dead birds were found to have broken necks, although a few had survived the fall only to be killed by passing vehicles. Starlings sent to the Department of Animal Pathology, Cambridge, were reported to have died mainly from asphyxia, presumably due to the severe fog.

The second "wreck", occurring in thick fog on the evening of 24th January, resulted in 30 corpses being found. More interesting, however, was the third "wreck" two days later, on 26th January, for although only 12 corpses were found the next day, it took place on a clear night when there was no fog. It should be added that these were definitely fresh corpses picked up in an area which had been cleared of bodies after the 24th. Unfortunately, none of these later casualties were properly examined and the exact cause of death is uncertain.

There has been no recurrence of such "wrecks" in the Bishop's Stortford area since then, in spite of fog on many nights during the winter of 1958/59. ROBERT J. DOWSETT

[The Merseyside Naturalists' Association *Bird Report* for 1958-59 gives details (p. 38) of a remarkable "wreck" of Starlings and other birds on the night of 15th/16th January 1959. Dense smog over the Mersey estuary "caught many Starlings returning on afternoon flights from Cheshire to Speke roost". These birds apparently dropped

into the heavily-oiled river, the tide carrying them down and depositing them on the shores from Rock Ferry to Wallasey. An estimate of 10,000 corpses (98% Starlings) was considered reasonable, and over 2,900 corpses were examined by Messrs. Eric Hardy, R. Warhurst, G. E. Rutter, R. Clitheroe and others. These corpses included 17 species apart from the Starlings: several sea-birds, ducks and waders among these had probably died from oiling alone, but other land-birds included Rook (*Corvus frugilegus*), Carrion Crow (*C. corone*), House Sparrow (*Passer domesticus*), feral pigeon (*Columba livia*), Skylark (*Alauda arvensis*), Blackbird (*Turdus merula*), Song Thrush (*T. philomelos*), Linnet (*Carduelis cannabina*) and Greenfinch (*Chloris chloris*). 23 corpses sent to Dr. A. R. Jennings at the Department of Animal Pathology, Cambridge, were "all coated heavy oil and sand. Alimentary tract in each case acutely inflamed, the lungs were congested, and, in many birds, contained multiple haemorrhages. The bodies of the Starlings showed the greatest changes in the lungs; all these birds had suffered from extensive pulmonary damage and had died from asphyxia. I would suggest that the Starlings were brought down as a result of smog. I consider that the oiling of the feathers occurred subsequent to the lung changes." We are grateful to Mr. Eric Hardy for drawing our attention to this account.—EDS.]

Starlings flying at night.—Between 4.30 and 5 p.m. on 31st January 1958 I observed the usual flocks of Starlings (*Sturnus vulgaris*) passing over my house at Great Witchingham, Norfolk, on a northerly course—their normal flight line to roost. It was a foggy evening and the flocks, some of which must have numbered over a thousand birds, were visible only when overhead: they were presumably flying at such a height that they could just see the ground (about 100 feet). At 6.30 p.m. on the same day I was surprised to hear a flock of birds pass directly overhead in the darkness. Visibility by this time was down to about 20 yards, having been in the region of 40-50 yards during the day (but the previous night, when the fog was very thick, it had been down to 8 yards or less).

I remained watching and it became evident that two flocks of Starlings, each numbering several hundred birds, were circling the house. They were clearly visible when passing overhead and audible most of the time. Beyond the house are two ranges of turkey pens which are illuminated at night by a total of approximately 3,600 watts. This light can be seen at quite a distance, even in foggy weather, and was presumably attracting the birds. Each time they sighted the farm buildings, however, the flocks would "flare" upwards with a roar of wings. Both flocks were accompanied by a distinct sound which seemed to be made by individual birds, either with primaries

missing or damaged, or else flying alone and low behind the rest, perhaps tiring. I remained watching for half an hour until 7 p.m. and then went out every 30 minutes or so. At 10.30 p.m. both flocks were still circling and apparently making rough figures of eight centred over the house. An average of 20 timings showed the larger flock to be audible for 25 seconds on each circuit, and inaudible for 15 seconds. On three occasions individual birds were heard to flutter down and crash-land—exhausted. These birds occasionally called. At times the two flocks seemed to amalgamate and then divide again. At 10.45 p.m. they had apparently finally joined up and a good many birds must have landed, though several hundreds still remained. An average of 7 timings showed the birds to be passing overhead every 46 seconds at about 60-80 feet. At 11.30 p.m. the one flock was still circling and an average of 4 timings showed it to be audible for 20 seconds and inaudible for 22. Visibility appeared to be lifting and at 11.47, when I next came out, it had increased to 150 yards; by this time a slight drizzle was falling. Two individual Starlings passed over, but the main flock was not in evidence.

That these birds were benighted on the way to their roost seems obvious, but, since trees silhouetted against the light were plainly visible to a human observer at 20 yards, one is tempted to ask why they continued to circle round for over five hours when they could presumably have settled in the trees. When visibility lifted at 11.30 p.m., did the main flock alight in the neighbouring trees, or did they fly several miles to their usual roost?

PHILIP WAYRE

Rock Bunting in Pembrokeshire.—On 15th August 1958, at Dale Fort, Pembrokeshire, we heard a persistent call-note which was new to us. It was coming from an area of scrub and bushes overlooking the sea—a single note repeated rhythmically, with the intervals 3-5 times as long as the duration of the sound (J.H.B.). The note was clear and not very high-pitched, a clipped “zze’ap” which was not truly bisyllabic, but rather a slide from the first part to the second. It was a note less clean in outline than the “tzink” of a Yellowhammer (*Emberiza citrinella*) and J.D.P. thought it a plaintive sound with a bubbling element.

Through binoculars in good light, at a distance of about 30 yards, we had short independent views of the bird, particularly of its head. This was a soft pale grey with well-marked black bands; the grey extended low round the back and sides of the head and down on to the throat. J.H.B. noted three dark bands on the side of the head while J.D.P., looking from above, saw three dark stripes on either side. The rest of the plumage left J.H.B. with an impression of strong rufous, but he cannot identify the rufous areas as his attention was focused on

the head. J.D.P. observed only the head. The bird was the size of a Yellowhammer and had the flight of a typical bunting. It flew away low and was later flushed again from on or near the ground in a patch of brambles, gorse and rough grass on the cliff edge. From here it flew low and silent back to the scrub area where it was first found. It was not seen again that day, but J.H.B. heard the same call at 7.15 a.m. on the 16th and J.D.P. also heard it $1\frac{3}{4}$ hours later.

This appears to be the first record of a Rock Bunting (*E. cia*) for Wales.

JOHN H. BARRETT and J. DOUGLAS PICKUP

Reviews

Pirates and Predators: the Piratical and Predatory Habits of Birds. By R. Meinertzhagen, C.B.E., D.S.O. Oliver and Boyd, Edinburgh and London, 1959. 240 pages; 18 colour and 26 monochrome plates. 70s.

Combining in his person the acknowledged status of both *enfant terrible* and elder statesman of British ornithology (in that order) Colonel Meinertzhagen shamelessly trades on the fact that he, like Sir Winston Churchill in a wider sphere, can now do no wrong or, alternatively, can get away with murder. We can therefore permit ourselves to enjoy at their face value such remarks as (to quote some of the more restrained):

"The excuse is that objectionable word 'vermin'. Every conceivable form of wild life which might possibly disturb game is classed as vermin, whereas the most dangerous disturber of wild life and the greatest vermin of all is man himself."

"It is not surprising that man is mentally and bodily diseased; what is surprising is that man has survived despite the medical profession."

Passing on, then, to the more ornithological aspects of this book, several of the colour plates are pleasing examples of the work of the late G. E. Lodge, while the remainder in monochrome form an enterprising blend of photographs and drawings which are on the whole very successful in illustrating the text. This is in four parts, the second and third dealing under species headings with such "amateur" predators as crows, herons, cormorants and gulls and with the "professionals" or diurnal and nocturnal birds of prey. The first part is generally concerned with such problems as food preferences, territories, and methods of attack and defence; the fourth, entitled "Autolycism", deals with ways in which birds make use of man and of other birds and animals.

Covering so wide a range, Colonel Meinertzhagen very sensibly proceeds by jumps, making a series of points in his own inimitable

style and illustrating them, often most cogently, by his own observations or those of others. For example, in discussing territories and hunting beats he describes the summer and winter daily routine of a pair of Golden Eagles on Ben Wyvis:

"With snow on the ground . . . they would hunt the summit of Wyvis for ptarmigan and hares in the early morning and in the afternoon would come lower down for grouse between 2 and 2.30 p.m. . . . This routine was regular and by posting myself at the proper place I could almost rely on seeing them."

This book is a rich and fascinating quarry of authentic examples of behaviour relating to its general theme and deals with a large number of species in Britain and in many other countries. The author's world-wide and seventy-year-long experience, together with his great knowledge of the literature and the problems involved, have enabled him to make many additions, large and small, to the facts available. For example, he carries much farther into the past than has hitherto been known the story of the Starling roosts of inner London. Taken all round, this is an impressive work which no one else could have written, and certainly no one can read it without feeling stimulated to pursue some of the many topics which Colonel Meinertzhagen uncovers with such perennial zest. E.M.N.

The Birds. By Oskar and Katharina Heinroth. English edition prepared by Michael Cullen. Faber, London, 1959. 175 pages; many text illustrations, some photographic. 18s.

This book provides an excellent introduction to many aspects of the life and behaviour of birds, and will be valuable to the field observer who, having learnt to identify the species, feels the need for a better understanding of them. Its author, Oskar Heinroth, was one of the great ornithologists of the early decades of this century. He hand-reared many species, and his classic *Die Vögel Mitteleuropas*, based largely on his own original observations, served as an inspiration to those who came after him. He was also for many years Curator of the Berlin Zoo, and the first German edition of the present volume was an attempt to bridge the gap between the rather naïve views held by the Zoo visitors and the scientific knowledge which was then becoming available. Although first published in 1936, it was brought up to date after the war in collaboration with his wife and certain sections have been further revised by the English translator, Dr. Michael Cullen.

Most aspects of behaviour are discussed, maintenance activities as well as reproduction. There are also chapters on growth, moulting, coloration, navigation and a variety of other topics. The treatment

in each case is that of an all-round ornithologist—behaviour is related to structure, physiology and ecology. Although more detailed and up-to-date treatises on many of the topics covered are now available, the book is written in an inspiring style and this English edition will enable many bird-spotters to increase their enjoyment by gaining a fuller understanding of the birds they see.

R. A. H.

Letters

Anting and dust-bathing

Sirs,—I read with interest the paper by K. E. L. Simmons on anting behaviour (*Brit. Birds*, 50: 401-424). In that, Simmons rejected A. H. Chisholm's theory that anting derived from dust-bathing. In this connection, however, it may not be generally known that an Australian bird, the White-winged Chough (*Corcorax melanorhamphus*), has a regular habit in which the elements of both appear.

Selecting an area of very dry ground, this bird will pick up beakfuls of dust and place them in various parts of its plumage. The dust may either be loose or be pecked out of hard ground. The postures of the White-winged Chough during this performance appear identical with those of active-anting, although they lack some of the excitement of the latter.* Dust is placed among the breast feathers; the body is stretched up and more is put among the feathers of the lower abdomen and the under tail-coverts; the wings are separately spread out and down, and dust is inserted along the undersides and against the body; also in this posture the head is stretched back and the feathers of the upper wing and back are similarly treated; finally, the tail is curved sideways and forward and the head brought back to reach the tail-feathers. At the end of the performance, which may last up to ten minutes, the bird shakes itself vigorously and at the same time takes flight, leaving a puff of dust behind it. The squatting position of dust-bathing is not used. In keeping with the communal habits of this species, several birds may perform together.

This habit was first recorded by J. Douglas Gibson (*Emu*, 54: 279). Gibson collected some of the dust used and made chemical tests on it for formic acid, with negative results. Since then I too have published an account of the performance (*Emu*, 57: 290) and have, in all, witnessed it some ten times. Here in Australia one may also frequently see the shallow excavations made by these birds. Every time, I have examined the area for traces of ants, ant-nests or ant-tracks, but always

* I have personal experience of active-anting in two Australian species—the Raven (*Corvus coronoides*) and the Yellow-tailed Thornbill (*Acanthiza chrysorrhoa*).

without success. In fact, on three occasions the action took place on hard flood-deposits in which no ants existed and from which any acid or foreign substance would, presumably, have been leached.

This would appear to be an instance of something midway between active-anting and dust-bathing. Is it the connecting link between these two activities, or a modification of anting, or an individual habit developed in this one species? I have never seen or heard of actual anting being performed by the White-winged Chough.

J. N. HOBBS

[We showed this letter to Mr. K. E. L. Simmons and he commented as follows: "I do not think that the unique dusting behaviour of the White-winged Chough—which, of course, is not a crow (*Corvidae*) but a bell-magpie (*Cracticidae*)—does necessarily provide evidence for a derivational link between dust-bathing and anting, though not enough is known about the phenomena for one to express convincing opinions either way. Possibly, however, both the dusting movements of the White-winged Chough and those movements used widely by Passerines in active-anting have been independently derived from wing-oiling movements (see Simmons, *Ibis*, 101: 368-372). Certainly the dusting of those few other Passerines in which the behaviour is known to occur—sparrows (*Passeridae*), larks (*Alaudidae*) and wrens (*Troglodytidae*)—seems in no way to resemble active-anting, though there may be a functional relation between the two (see Derek Goodwin, *The Ornithologists' Guide*, pp. 101-104). A. H. Chisholm in his recent review (1959) of the history of anting (*Emu*, 59: 101-130) includes a record of the White-winged Chough passive-anting, on the authority of G. Painter (August 1946 issue of *Wild Life*)."

It should be added that we received Mr. Hobbs's letter before the publication of Chisholm's reference to passive-anting in this species. —EDS.]

Birds crossing the Atlantic on ships

Sirs,—The recent notes by Miss Katharine Tousey and Prof. John M. R. Margeson on "Myrtle Warblers (*Dendroica coronata*) crossing the Atlantic on board ship" (*Brit. Birds*, 52: 237-238), and also the one by Messrs. R. MacArthur and P. Klopfer on other American species (*Brit. Birds*, 51: 358), prompt the following comment on the appearance of New World birds in the Old World.

Judging by my own repeated experience, every ship that sails from the east coast ports of the United States while a migration is under way carries with it an assorted cargo of migrants, usually Passerines. Most, if not all of them, disappear in the course of the first two days.

Some, however, succeed in making themselves at home and sustaining themselves indefinitely on board. When the first landfall is made I have seen such passengers leave the ship and wing their way ashore. Bigger birds are often captured by members of the crew, and are caged and fed, to be released when land is sighted. Thus, on my last ship-crossing of the Atlantic, from New York to the Mediterranean in September 1956, we carried among other passengers a Least Bittern (*Ixobrychus exilis*) which came aboard the first night and was promptly adopted by a steward. It was released in the Straits of Gibraltar, but unfortunately the steward was an eccentric who would not give the bird a proper diet and it was consequently so weak that it ended by falling into the ocean.

Generally it is the weak flyers which are constrained to accept this kind of passage. They come aboard at night, or one sees them come aboard by day, and the shore is too far away for them to risk the attempt when they want to make their way back to it.

In these circumstances I always wonder at the general tendency to assume as a probability that any American bird that shows up in Europe made it across on its own. The fact is that many birds must be helped over the Atlantic every year, whether others make it on their own or not. If the travel is mostly one way, that may be because the prevailing winds are offshore on the American side, onshore on the European. With the co-operation of interested ship's officers, crew members or passengers, it ought to be possible and worth-while to get more data on these stowaways.

LOUIS J. HALLE

[Some of the points in Mr. Halle's interesting letter have not been overlooked by those responsible for considering the claims of certain American birds to be added to the British list. In 1954 and 1955 the occurrence of a Yellowthroat (*Geothlypis trichas*) on Lundy and of a Myrtle Warbler near Exeter, Devon, forced us in conjunction with the B.O.U. Records Committee to reconsider the whole question of "assisted passage". The conclusion was published at the time (*Brit. Birds*, 48: 146-147; see also *Ibis*, 98: 156-157) that this possibility should not necessarily deny a bird admittance to the list. The regular migrations that take place between Greenland and Europe show that long sea-crossings by small Passerines are perfectly possible, and there is no means of telling whether or not and for how long *any* American bird which reaches Britain may have settled on a ship. It was felt, therefore, that each case should be judged on its merits, but that in general all American birds should be accepted as genuine records unless there was a likelihood of escape from captivity or other direct evidence that the individual had not arrived in a free state. The unrealistic alternative would be to exclude all American species from the British

list. However, we do appreciate that shipboard crossings are regularly made and we are interested in any well-authenticated cases like those quoted at the beginning of Mr. Halle's letter. It would indeed be valuable, as Mr. Halle suggests, to obtain more complete records of transatlantic bird passengers, but such a scheme would need considerable organization.—EDS.]

Requests for Information Field Investigations of the B.T.O.

Status of the Wryneck.—Readers are reminded that all records of this species are of value (see *Brit. Birds*, 51: 163) and should be sent to editors of county bird reports or, in cases of doubt, to the organiser: Dr. J. F. Monk, The Glebe Cottage, Goring, nr. Reading.

Great Spotted Woodpecker Enquiry.—Information is required on (1) the present status of the Great Spotted Woodpecker in the British Isles; (2) whether the practice of visiting bird tables is increasing and if so whether it is due to a new "tameness" or to a shortage of other food; and (3) whether the practice of attacking nest-boxes is a new habit and if it is due to shortage of nest-sites (*Brit. Birds*, 52: 126-129, 270-271). Forms for this enquiry (which is to continue until March 1960) may be obtained from the organiser, Mrs. P. V. Upton, Park Lodge, Margaretting, Ingatestone, Essex.

Winter status of the Lesser Black-backed Gull.—This is a repeat of the enquiries held in the winters of 1949-50 and 1950-51 which showed that a small but probably increasing number of these gulls were wintering in the British Isles. There are indications of a considerable increase in some areas since then and all records, even if only of single birds, are of value. Observations should be sent to J. A. G. Barnes, Earnscat, Arnside, Westmorland, from whom forms may be obtained. This enquiry terminates on 14th February 1960.

Recent Reports and News

By Kenneth Williamson and I. J. Ferguson-Lees

The items here are largely unchecked reports, and must not be regarded as authenticated records. They are selected, on the present writers' judgment alone, from sources generally found to be reliable. Observers' names are usually omitted for reasons of space and in case a report is subsequently rejected, and none of the items will be mentioned in our annual Index. Readers are asked to submit anything of interest as quickly as possible.

This summary should be read in conjunction with that in our last issue (pp. 435-440) as it completes the outline for the months of September and October by dealing with the Passerine and other groups which were not covered there.

SWIFTS TO WOODPECKERS

Late Swifts (*Apus apus*) were seen at Warden on the Isle of Sheppey (Kent), North Finchley (Middlesex) and Craster (Northumberland) on 17th, 18th and 19th October

respectively, and it would perhaps not be too out of place to mention here two even later ones at Appleby (Westmorland) and over Brean Down (Somerset) on the astonishing dates of 20th and 22nd November. These last two are later than all but two of the dates given in *The Handbook*, and all five of these reports are later than those in 1958 although there were then rather more October records (*Brit. Birds*, 51: 531). The only Alpine Swift (*A. melba*) reported during the period was at St. Agnes (Isles of Scilly) on 6th October.

Kingfishers (*Alcedo atthis*) are not usually thought of as migrants and so it is interesting to note that occasional ones were seen at St. Agnes during September (the first was actually on 18th August) and that on 2nd October there were no fewer than three there. One was seen flying out to sea from Selsey Bill (Sussex) on 15th August, and further suggestion of migration came from Cape Clear Island (Co. Cork) and Portland Bill (Dorset): at the former observatory single ones were recorded on 2nd and 14th September, and at the latter on 20th September and 10th October. The last perched on top of the lighthouse tower.

As already mentioned (*Brit. Birds*, 52: 320), it was a very poor autumn for Hoopoes (*Upupa epops*): one near Baltimore (Co. Cork) on 28th August has not previously been mentioned, but the only September record we have received was at Great Saltee (Co. Wexford) on the 26th. A juvenile Bee-eater (*Merops apiaster*) appeared at Cape Clear Island (Co. Cork) on 17th-18th October, and Ireland also produced one of the only three Rollers (*Coracias garrulus*) reported during this period, at Tory Island (Co. Donegal) on 30th September. The other two Rollers were at Staines Reservoir (Middlesex) on 26th September and at St. Agnes in the Scillies on 22nd-23rd October.

Migrant Wrynecks (*Jynx torquilla*) were rather scarce, particularly compared with 1958 (*Brit. Birds*, 52: 358), though we received a few reports from Co. Durham, Yorkshire, Norfolk, Essex, Kent and Sussex. A Great Spotted Woodpecker (*Dendrocopos major*) appeared at Cley (Norfolk) on 25th September and a bird of the Northern race (*D. m. major*) was trapped there on 11th October.

LARKS, TITS AND TREECREEPERS

A Short-toed Lark (*Calandrella cinerea*) was identified at Cley on 14th October, but this was the only unusual species of lark reported.

There was evidence of a small scale irruption of Blue, Great and Coal Tits (*Parus caeruleus*, *major* and *ater*) during September and October, particularly from the middle of September to about 20th October. We have received reports of Blue and Great Tits on the move from Norfolk down to Kent and from Kent to Dorset and Somerset, and from 13th October Fair Isle had the first Great Tit recorded there for years, but the general impression is that the whole thing was on a much smaller scale than in 1957. Continental Coal Tits (*P. a. ater*) were also concerned: two at Dungeness (Kent) on 4th September were followed by eight in mid-month and 15 on the 26th; Sandwich Bay (Kent) had 6 on the 17th and 4 on the 30th, and Portland (Dorset) two from the 14th. In October there was one at Portland on the 3rd and also 4 at St. Agnes; Cape Clear Island (Co. Cork) reported one on the 6th and there was an increase at St. Agnes next day. Movement of Long-tailed Tits (*Aegithalos caudatus*) was also indicated by the unprecedented occurrences of 7 at Portland on 2nd November and 5 at Great Saltee (Co. Wexford) on the 5th, and one was seen to fly in off the sea at Hartlepool (Co. Durham) on 25th October.

The limelight was undoubtedly stolen, however, by the Bearded Tits (*Panurus biarmicus*). The numbers of these birds have been building up steadily in Norfolk and Suffolk over the last two or three years and 1959 seems to have been a wonderfully successful breeding season. Parties of Bearded Tits have been seen flying up

from and actually leaving their reed beds and it is not surprising that odd ones should have appeared at a number of places in other counties, though it is difficult to know whether such vagrants are of British stock or whether they may have come from Holland. There was one at the sewage farm at Cambridge on 9th September and one at Claydon Brook near Winslow (Buckinghamshire) on the 15th. No more vagrants were then recorded until the middle of October, when on the 17th no less than 11 (of which 6 were caught and ringed) appeared at Spurn (Yorkshire) and the next day 3 were seen at Hornsea Mere (Yorkshire). On 31st October at least 6 (of which 3 were caught and ringed) were found at Pett Level (Sussex) and 7 were still present a fortnight later. On 4th November two were identified at the Crunibles (Sussex) and then, to bring the story as up to date as possible, on 22nd November 4 appeared at Marsworth Reservoir, Tring, which is just on the Buckinghamshire side of the boundary between that county and Hertfordshire, and six days later, on the 28th, three were seen at Cassington gravel-pits (Oxfordshire). The Marsworth birds were still present on the 29th and the Cassington ones on 5th December. Finally, too late for details here, we have had reports of Bearded Tits in Kent, Lincolnshire, Gloucestershire and Warwickshire.

Northern Treecreepers (*Certhia f. familiaris*) are identified from time to time in this country, particularly on the east coast, but there are few records of specimens which have been compared with skins. It is therefore interesting to note that a Treecreeper which was caught at Spurn (Yorkshire) on 6th October, and which died as the result of an unfortunate accident, proved to be of this form when sent to the Bolton Museum. A Treecreeper at Fair Isle on 17th-18th October was also identified as of this race.

THRUSHES, ROBINS AND GOLDCRESTS

The most striking Passerine movement of the period was undoubtedly the influx of Goldcrests (*Regulus regulus*) and Robins (*Erithacus rubecula*) which took place in the first half of October and which seemed to be accompanied by unusual numbers of Wrens (*Troglodytes troglodytes*) and big movements of thrushes—Song Thrushes (*Turdus philomelos*), Blackbirds (*T. merula*), Redwings (*T. musicus*) and Fieldfares (*T. pilaris*), with odd Ring Ouzels (*T. torquatus*). We are not attempting to cover this influx in any detail here because it is best followed by the reports from the bird observatories in *Bird Migration*, No. 3. However, we might perhaps summarise briefly by saying that the first wave of Goldcrests became marked in the south-east on 30th September and reached another peak on 4th and 5th October when Robins were also numerous. On these dates, too, as well as on the 6th and to a lesser extent the 7th and 8th, these species were particularly remarked upon in Kent, Sussex and Essex, and as far north as Yorkshire and Co. Durham. The peak period, however, was from the 9th and 10th to the 12th or 13th. There was then a much greater influx of Robins and Goldcrests and the real hordes of thrushes, particularly Redwings, came in at this time. Now the movement was really striking as far west as Dorset, the Isles of Scilly and south-west Ireland, up the Irish Sea as far as Bardsey and all the way up the east coast. The various species were not always in the same proportions and sometimes one or another was absent, but some impression of numbers can perhaps be gained from such estimates as 100 Goldcrests in a garden at Portland (Dorset), 500 Goldcrests in one small area at Sandwich Bay (Kent), 600 Goldcrests at Gibraltar Point (Lincolnshire), 1,000 Robins on St. Agnes (Isles of Scilly) and so on. On the night of the 10th/11th there were remarkable hordes of birds around the lighthouse on Bardsey: "immense swirling clouds" of Redwings circled round and a tragic 400 of the many thousands killed themselves against the light; the many other birds included various warblers and flycatchers. Later in October and in early November reports of increases in Goldcrests, and also unusual

numbers of Fieldfares and Redwings, began to come in from the Midlands, north-west England and other inland areas.

Various other species appeared during the time of this movement. These included large numbers of Starlings (*Sturnus vulgaris*), a peak among the Blue and Great Tits already mentioned, large numbers of Chiffchaffs (*Phylloscopus collybita*) in the south, Redstarts (*Phoenicurus phoenicurus*) in the east, and a trickle of Stonechats (*Saxicola torquata*) and Whinchats (*S. rubetra*). There were also various rarer vagrants which will be dealt with in the sections which follow.

FIRECRESTS

There were some early Firecrests (*Regulus ignicapillus*) in Kent, with one on 30th August, 5 on 4th September and 6 next day at Dungeness, two at Sandwich Bay on 6th September, and single birds at Folkestone on the 8th, 9th and 23rd. There was a larger influx in this area on the 30th, with 10 at Dungeness and 6 at Sandwich (increasing to 10 on 1st October), and this movement was reflected along the east coast at Blakeney (Norfolk), Flamborough Head (Yorkshire) and the Isle of May (Fife). These numbers were small—there were only two at Flamborough and the same at Blakeney (the second appearing there on the 1st)—but the single bird at the Isle of May which stayed from 30th September until 3rd October is of special interest because it was the first Firecrest ever recorded in Scotland.

Firecrests were seen at roughly five-day intervals at St. Agnes (Isles of Scilly) from 10th September to 2nd October, and there was another there on the 11th, but the most striking record in this region was the 7 at Cape Clear Island (Co. Cork) on 10th October, for there are only two previous Irish records. Along the Channel coast there were sporadic appearances in Hampshire (Hengistbury Head and Southampton, 16th and 18th October respectively) and Dorset (Portland, one on 5th October and two on the 10th).

BLUETHROATS

Bluethroats (*Cyanosylvia svecica*) were widely scattered, but there were not nearly so many as in 1958 (*Brit. Birds*, 51: 435-436). The species was present at Fair Isle during 16th-25th September (two on the 18th), but appeared earlier in the south. The first ones were reported from Cley (Norfolk) and Bognor (Sussex) on the 4th and 6th, followed by one at Spurn (Yorkshire) during the 9th-11th and another there on the 17th. One was seen daily at Shoreham (Sussex) from the 12th to the 23rd (with two during the 18th-20th) and there were single birds at Stanpit Marshes near Christchurch (Hampshire) on the 12th and 19th. A first-winter male at Marston near Grantham (Lincolnshire) on the 13th, and other birds at Rye Meads (Hertfordshire) on the 19th, at Rye Harbour (Sussex) and Hoylake (Cheshire) on the 20th, and at Folkestone (Kent) on the 22nd, complete the September tally for English localities and very few remain to be added for October: single birds at Gibraltar Point (Lincolnshire) on the 2nd, at Fair Isle on the 5th, 9th and 15th, at Hartlepool (Co. Durham) on the 6th and at Pagham Harbour (Sussex) on the 14th, and one or two at St. Agnes from the 12th to the 25th. The last included an adult male of the Red-spotted form (*C. s. svecica*) on the 12th. The only Irish records came from Cape Clear on 17th-18th September and again exactly a month later.

RARER WARBLERS

The earliest of the rarer warblers to appear was the Aquatic (*Acrocephalus paludicola*). Some nine August occurrences have already been detailed (*Brit. Birds*, 52: 318-319) and to these should be added a tenth—one at Pagham Harbour (Sussex) on the 29th. During September there were at least 12 more reports, including a second observation at Ham Island near Old Windsor (Berkshire) on the 13th (perhaps the same bird

as in August). Eight of these were in the first nine days of the month—at Portland and at Marazion Marsh (Cornwall) on the 2nd, at Wartling near Hailsham (Sussex) on the 5th, at St. Agnes and at Stanpit Marshes near Christchurch (Hampshire) on the 6th, again at the same two localities on the 8th, and at the Crumbles (Sussex) on the 9th. There was another at St. Agnes on the 16th and at Stanpit from the 19th to the 23rd, and finally one at Beddington (Surrey) on the 20th—making an autumn total of more than a score from Kent westwards along the Channel counties to Cornwall and the Isles of Scilly.

As mentioned earlier (*Brit. Birds*, 52: 319), there were fewer Melodious Warblers (*Hippolais polyglotta*) than in 1958, and the only additions in September were one at Bardsey Island (Caernarvonshire) on the 1st, two at Cape Clear Island on the 3rd and one at St. Agnes on the 7th, confirming the peculiarly southern and south-western distribution we have commented on previously (*Brit. Birds*, 51: 436-437). The other member of this species-pair, the Icterine (*H. icterina*), strayed farther west than usual, with appearances at Cape Clear Island in September on the 2nd and 21st (two) and at Great Saltee on the 4th and 7th, all first-winter birds. None appeared at Fair Isle after August, but the east coast had Icterines at Helmsdale (Sutherland) on the 3rd and at Spurn (Yorkshire) on the 2nd (three) and 3rd-4th. The last report of an Icterine Warbler came from Dungeness on 25th September. An Olivaceous Warbler (*H. pallida*) trapped at Tory Island (Co. Donegal) on 29th September provided the first record of this species for Ireland.

Another extremely rare species was a Brown-backed or Rufous Warbler (*Agrobates galactotes*) which was well seen at Prawle Point (Devon) on 20th October. The last previous appearance of this species was at Great Saltee (Co. Wexford) on 22nd September 1951. The Bonelli's Warbler (*Phylloscopus bonelli*) trapped at Bardsey on 19th August (*Brit. Birds*, 52: 319) was twice retrapped down to 5th September, and another first-winter Bonelli's Warbler was caught there five days later, making the sixth British record. Fair Isle had a "corner" in Arctic Warblers (*Pb. borealis*) with three separate birds, all trapped, on 1st, 8th and 17th September. There were eight records of Greenish Warblers (*Pb. trochiloides*) at the Crumbles (Sussex) on 11th September, at Holkham (Norfolk) on 12th October and at Cape Clear Island during 17th-24th October and 30th October-1st November.

Yellow-browed Warblers (*Pb. inornatus*) were more frequent than in 1958 and the scatter of records was unusually wide. The first appeared at Cape Clear on 19th September, and the next at Folkestone (Kent) on the 22nd. Fair Isle had single ones on 26th September and 2nd-5th, 12th and 14th October. More surprising were the several at Sandwich Bay (Kent) where no fewer than 4 were trapped or seen between 27th September and 4th October. There were single birds at two widely-separated observatories, Skokholm (Pembrokeshire) and the Isle of May (Fife), on 2nd October; and a well-known English migration-student, returning to this country after a long sojourn in the United States, was welcomed home by a Yellow-browed Warbler which alighted on R.M.S. *Queen Elizabeth* between Cherbourg and Southampton on 12th October.

Barred Warblers (*Sylvia nisoria*) continued to flow into the country during September, and this species was of daily occurrence at Fair Isle until the 25th (with up to three on some days in mid-month), by which time it was estimated that no fewer than 30 birds had passed, 16 having been trapped. Foula (Shetland), 45 miles north-west of Fair Isle, had a good spell at the beginning of the month with two on the 2nd and four on the 3rd, and two over the next two days. Along the eastern seaboard there were two at the Isle of May on 11th September and one on the 16th; two at the Farne Islands (Northumberland) on the 8th and another from the 20th to the 25th; single birds at South Gare on the Yorkshire side of Teesmouth on the 13th and 20th; two or three daily at Spurn during the 3rd-9th, two being

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retrapped after a week's stay; three at Gibraltar Point on the 1st and 3rd and others on the 15th and 20th, one remaining to the 27th; one at Holme (Norfolk) on the 6th; single birds at Cley (Norfolk) on the 2nd, 4th, 5th and 11th, and two on the 7th; and one at the Naze (Essex) on the 6th. More remarkable were the Barred Warblers on the south coast, some of which have already been mentioned (*Brit. Birds*, 52: 319): to these should be added one at the Crumbles (Sussex) on 10th September. In the Irish Sea there were single Barred Warblers at the Calf of Man on 21st August and at Bardsey from the 23rd to the 28th, at Grune Point (Cumberland) on 6th September and at Great Saltee on the 21st. Finally, there was a late bird at Spurn on 10th October. It is hardly likely that fewer than 70 individuals are accounted for by these records.

RED-BREASTED FLYCATCHERS

Last year we thought that the autumn season would long be remembered for the large number of Red-breasted Flycatchers (*Muscicapa parva*) brought to this country in the easterly anticyclonic weather of early and mid-September (*Brit. Birds*, 51: 433-434; 52: 360-363), but that memory is already dimmed by the even more phenomenal score in 1959. It may well prove that nearly twice the number have been recorded, bringing the total for the two seasons to well over the hundred mark. There was a bigger movement through Heligoland, the German North Sea bird observatory, than in any previous year, over 20 being ringed in September, eight of them in one day, the 14th, which with the days on either side was the peak period there. Red-breasted Flycatchers were also unusually numerous in Denmark and in southern Sweden: Falsterbo had three on the 15th-16th, two on the 24th, and single birds on a number of dates.

Along the east coast of Britain the best period was 17th-19th September and Spurn (Yorkshire) had a bigger share of the Red-breasted Flycatchers than any other station: by the end of October the tally there was 10 trapped and 4 or 5 others seen. After the one in Essex at the end of August (*Brit. Birds*, 52: 319), Spurn followed with one on 4th September and two on the 6th when there was also one at Blakeney Point (Norfolk). Between then and the peak in the third week of the month single birds appeared at Fair Isle, the Isle of May, Holy Island (Northumberland), Flamborough Head (Yorkshire), Spurn, Gibraltar Point (Lincolnshire) and Cley (Norfolk). The peak on the 19th produced no less than 4 at Spurn and two at Holme (Norfolk), and on the next day an adult male was reported aboard S.S. *Britannia* in the North Sea at 54°30'N., 4°45'E. The 26th saw the start of another influx at Fair Isle which increased to 4 next day, and two reached the Isle of May on the 29th.

Meanwhile, as happened in 1958, a number penetrated to the Irish Sea and the south-west, appearing slightly later than on the east coast. Great Saltee (Co. Wexford) was visited by Red-breasted Flycatchers on the 10th-11th, 20th-21st and 27th, St. Agnes (Isles of Scilly) had single birds on the 20th and 23rd, and Cape Clear Island (Co. Cork) one on the 25th and two next day. A lost bird flew aboard the ocean weather-ship at "Juliett" 400 miles west of Ireland on the 16th, disappearing the following day.

In October Red-breasted Flycatchers were seen at Fair Isle on the 2nd, 3rd (2), 6th, 19th and 20th, while others were scattered down the east coast at Hartlepool (Co. Durham) on the 2nd and 6th, at Flamborough on the 1st, at Spurn on the 4th (2), 5th, 7th, 9th and 17th, at the Isle of May on the 4th (1) and 6th (2), and at Shellness on the Isle of Sheppey (Kent) on the 5th-6th. Even remote North Rona, 50 miles north-west of Cape Wrath, now came into the picture with one during the 10th-13th. Some continued to infiltrate the Irish Sea region, and single birds were recorded at Skokholm (Pembrokeshire) on the 5th; at Cape Clear during

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the 6th-11th; at Bardsey (Caernarvonshire) on the 10th, on the night of the 10th/11th (killed at the light) and on the 11th; at St. Agnes on the 11th and 20th-21st; at Lundy (Devon) on the 12th-14th; and at Great Saltee on the 1st-2nd and 18th.

PIPITS, SHRIKES AND STARLINGS

As usual, Portland (Dorset) stole the limelight with Tawny Pipits (*Anthus campestris*), having two on 5th-6th September, a third on the 11th and two more on the 28th. There were also single ones at Whitstable (Kent) on the 4th, at the Crumbles (Sussex) on the 9th and at Cape Clear Island on 9th October. Cape Clear Island also reported a Richard's Pipit (*Anthus novaeseelandiae richardi*) on 14th October, while others appeared at Sandwich Bay (Kent) on 1st October, at West Huntspill (Somerset) from the 4th to the 18th, and at Fair Isle there were three on the 8th. It was at West Huntspill that a Richard's Pipit wintered from December 1958 to February 1959 (*Brit. Birds*, 52: 32, 68, 103).

Rather few Red-backed Shrikes (*Lanius cristatus collurio*) appeared on the east coast during September and, for example, only one was recorded on Fair Isle, on the 11th. Other scattered reports came from Northumberland, Norfolk, Suffolk, Essex and Kent. A more remarkable occurrence was the one at Tory Island (Co. Donegal) on the 12th. Nor was it a good September for Woodchat Shrikes (*L. senator*) and, apart from the one at Great Saltee from 30th August to 9th September already mentioned (*Brit. Birds*, 52: 320), the only observation reported was a young bird at Portland (Dorset) on 9th September. This was accompanied by an adult female Red-backed and followed next day by a problem red-tailed shrike which clearly belonged to one or another of the eastern forms of *L. cristatus* (of which *isabellinus* and *phoenicuroides* are representatives). There was also a late Red-backed Shrike at Portland on 12th October. The first Great Grey Shrikes (*L. excubitor*) of the winter were reported from Blakeney Point (Norfolk) and the Isle of May (Fife) on 4th October and others during the month included one at Selsey Bill (Sussex) on the 25th.

An immature Rose-coloured Starling (*Sturnus roseus*) appeared at Portland Bill on 6th September, and during the second and third weeks of October an adult was seen several times in the Nottingham area.

WAXWINGS

Most people will by now know that yet another invasion of Waxwings (*Bombycilla garrulus*)—the fourth in three years—has taken place. An outline of its progress will be given in our next summary, but as the first ones appeared on 30th and 31st October we must make brief mention of them here. The first reports of all came from Dornoch (Sutherland) and Sheringham (Norfolk) on the 30th, and the next day these birds were noted in Aberdeenshire, Angus and East Lothian, as well as flocks of 14, 17, 27, 20-30 and 50 at five localities in Norfolk. During November Waxwings were observed in most east coast counties and also in west and south-west Scotland, north-west England and down to Somerset. In some parts of the country, particularly Scotland, the impression is that this may be the largest invasion of the recent four.

FINCHES AND BUNTINGS

Among finches, the identification of a Serin (*Serinus canarius*) at Cape Clear Island (Co. Cork) on 4th October is specially interesting. Three Arctic Redpolls (*Carduelis hornemanni*) are reported to have reached Hilbre Island (Cheshire) on 16th October. Earlier, from 29th August, there had been an invasion of Greater

Redpolls (*C. flammea rostrata*) at Foula and Fair Isle in Shetland and the mid-September numbers exceeded even those of 1955 (see *Dansk Orn. Foren. Tidsskr.*, 50: 125-133). The first Scarlet Grosbeak (*Carpodacus erythrinus*) reached the Isle of May (Fife) on 28th August. There were then two at Fair Isle on 1st-2nd September, and one at Foula during the 2nd-4th with two next day. More unusual was the one which was caught in a mist-net and also watched at Benacre (Suffolk) during the 2nd-4th, and afterwards Fair Isle had further visitors during the 7th-10th, on the 15th and during the 18th-25th. A Northern Bullfinch (*Pyrrhula p. pyrrhula*) was seen at Fair Isle on 22nd October.

Crossbills (*Loxia curvirostra*) continued in evidence at many places throughout September and only a few of the reports can be mentioned (*cf. Brit. Birds*, 52: 280, 319). Particularly interesting were 4 at Skokholm (Pembrokeshire) on 1st September, 4 on Foula during the 2nd-6th, up to 4 at Fair Isle in the first half of the month, and small movements at St. Catherine's Point (Isle of Wight) on the 3rd and at Selsey Bill (Sussex) on the 5th-6th, 12th and 19th-20th.

Among the buntings were two reports of species not previously recorded in Ireland, one at each end of that country: Tory Island (Co. Donegal) produced a female Yellow-breasted Bunting (*Emberiza aureola*) on 18th September and Cape Clear Island (Co. Cork) a male Rustic Bunting (*E. rustica*) on 9th October. A Rustic also appeared at Fair Isle on 15th October, and Little Buntings (*E. pusilla*) were seen there on the 17th and from the 19th onwards. Previously, in late August and early September, there had been four or five Little Buntings at Cape Clear (*Brit. Birds*, 52: 319), and birds seen again from the middle of September to 11th October (two) were probably from the same party which had joined with a local finch and bunting flock. There were also single Little Buntings at the Isle of May on 17th September and at the lighthouse on Bardsey (Caernarvonshire) on the remarkable night of 10th/11th October already mentioned. Other buntings included a male Red-headed (*E. bruniceps*) at Great Saltee on 22nd September, and it is worth mentioning that a bird of this species was also seen at Cap Gris Nez, France, on the 24th.

There were not so many Ortolans (*E. hortulana*) as in 1958, and they were apparently entirely absent from the east coast except at Cley (Norfolk) where up to two were recorded on 2nd-3rd, 11th and 18th September. After the late August influx in the south Irish Sea region (*Brit. Birds*, 52: 319), a first-winter male at Portland on 6th September was quickly followed by one at St. Agnes during the 7th-10th; Cape Clear had an adult female during the 10th-12th; there were then two birds at Portland on the 11th, an adult male at Pagham Harbour (Sussex) on the 14th and occurrences at St. Agnes and Skokholm on the 18th. A very late bird was the adult male at Lower Hope Pools (North Kent) on 26th October.

It was a better autumn than most for Lapland Buntings (*Calciarius lapponicus*), numbers in the north being higher in early September than at any time since the big invasion of 1953 (*Brit. Birds*, 49: 6-25). There were also perhaps more than usual in north Norfolk by the middle of September, while the species was noted in Sussex on the 20th and 23rd and birds reached St. Agnes at about this time. Other places, however, from Yorkshire to Kent reported none until the first week of October, and Portland Bill (Dorset) not until the end of that month. In September there were scattered records in the west at Cape Clear, Skokholm and the Calf of Man, and one at Shotton Pools (Flintshire) on 25th October is also sufficiently unusual to be worth mentioning.

Finally, there was an unusual influx of Twites (*Carduelis flavirostris*) in south-east England (Sussex, Kent and Essex) between mid-October and early November, and movement of Siskins (*C. spinus*) was widely reported during October. We hope to give fuller details of these features in our next summary.

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2. Notes should be worded as concisely as possible, and drawn up in the form in which they will be printed, with signature in block capitals and the writer's address clearly written on the same sheet. If more than one note is submitted, each should be on a separate sheet, with signature and address repeated. In the case of rarity records, any supporting description which is too detailed for publication should be attached separately.

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The irruption of tits in autumn 1957

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INTRODUCTION

IN SEPTEMBER 1957 reports from both coast and inland indicated unusual movements of tits and some other species. An appeal was issued (*Brit. Birds*, 50: 495 and 542) for any relevant observations including outbreaks of milk-bottle opening and attacks on paper and other materials. This appeal was repeated in *Bird Study* and in various magazines and newspapers, and supplemented by three B.B.C. broadcasts. The response was most gratifying, indeed almost overwhelming, as the list of acknowledgements shows. This wealth of information has meant, however, that it is quite impossible to give details of all observations. Even in summary form the report is lengthy and must appear in two parts. The first deals with the movements and increases of tits in the British Isles in the late summer and autumn of 1957, the position during the winter months, the return movements in 1958, the behaviour during the invasion, and the ringing recoveries. The second part will include observations elsewhere in Europe, the movements of other species, the evidence for previous tit irruptions, and a discussion of the probable causes of the events in 1957.

MOVEMENTS OF TITS IN LATE SUMMER AND AUTUMN 1957

Before mid-September

Increases in the numbers of common birds are easily overlooked, especially just after the nesting season, except in places like the centres of cities and some coastal regions. Nevertheless, there is much evidence that British Blue and Great Tits (*Parus caeruleus* and *major*) were unusually abundant in the late summer of 1957 and that some were wandering outside their normal haunts before there were any

signs of invasion by Continental birds. This local wandering is suggested by a number of cases of the retrapping of ringed birds not seen for periods of up to four years, and also by the presence of Blue and Great Tits at such places as Steep Holm in the Bristol Channel. Reports like the last indicate that it began in late June and early July. Increases later in July and in early August, mainly of Blue Tits, were noted at places in Middlesex, Surrey, Kent, Berkshire, Gloucestershire, Yorkshire and North Wales, and by the second half of August such reports were numerous. They mostly refer to inland areas, chiefly in S. England, with isolated records from the Midlands, N. England and N. Ireland, but both Great and Blue Tits—usually in small numbers—appeared at a few places on the coast, from Essex to Somerset, whilst Saltee had its first recorded Blue Tit.

In early September there were more reports of coastal increases and movements. At Titchfield Haven (Hampshire) Blue Tits were unusually plentiful on the 7th, at Gibraltar Point (Lincolnshire) 24 Blue Tits were seen coasting south-west on the 8th, and there were parties of Blue and Great Tits at Sand Point (Somerset) on the 13th. The first reports of unusual numbers in Scotland relate to this period—an influx of Great Tits at Avoch (Ross) and an increase of Blue Tits at Kilcreggan (Dunbarton). Actual passage was not often seen, though at Richmond Park (Surrey), from 16th to 20th August and later, parties of Blue and Great Tits were observed going south-west and on 13th September small flocks of Blue were moving north-west at Wellington (Shropshire).

Coastal and inland movements in the latter half of September

It is important to note that before mid-September there were few records suggesting any increase in Coal Tits. Odd wanderers were reported in late August and early September from four places in S. England and one in Yorkshire, but the only large numbers at this time were on the shore of Belfast Lough on 8th September. In view of this, the appearance in mid-September of small numbers of Coal Tits almost simultaneously at many places on the south and east coasts of England suggests that this was the start of the influx from the Continent. The first were at Spurn (Yorkshire) and Dungeness (Kent) on 14th September, at Gibraltar Point on the 15th, and at Portland (Dorset), Farlington Marshes (Hampshire) and South Shields (Co. Durham) on the 16th. Numbers were small, but they were followed a day or two later by more Blue Tits and occasional Great Tits. Thus, on 14th September three tired Blue Tits were seen in the bushes at Eastney Point near Portsmouth (Hampshire), and on the 15th nine Blue were reported from Dungeness, whilst some 250 were counted between early morning and early afternoon moving in a north-west

direction up Southampton Water (Hampshire). On the 16th Dungeness had 25 Blue Tits and two Great, Spurn 12 Blue and eight Great, and an increase of Blue Tits was noted at Cleethorpes (Lincolnshire). On the 17th the first signs of the movement of Blue Tits were seen at Portland.

In the next few days there were reports of parties of Blue Tits, with occasional Great and Coal, from many places on the east and south coasts of England, from Whitley Bay in Northumberland to Portland in Dorset.* Numbers were still relatively small, with apparently not more than a hundred Blue Tits in a day at any place and usually less than ten Great or Coal Tits, and they fluctuated on different parts of the coast. Thus, while Spurn reported none from 21st September until almost the end of the month, Gibraltar Point had an increase of all three species on the 23rd, and in Norfolk influxes of Blue Tits occurred at Cley and Blakeney between the 20th and 22nd and at Cromer on the 21st and 22nd. The 21st marked the first invasion of Blue Tits at Whitley Bay (Northumberland) and the Naze (Essex), and in the south they were seen at Shoreham and Pagham Harbour (Sussex) and Titchfield Haven and Christchurch Harbour (Hampshire) while there were over eighty moving west at St. Catherine's Point (Isle of Wight). Yet on this day there was little movement at Dungeness or Sandwich Bay in Kent.

There are signs that the Blue Tits in this first coastal movement may have spread inland rapidly, perhaps triggering off more extensive movements in the resident birds. Thus increases, often marked, were noted at Ruddington (Nottingham) on the 18th; at Norwich (Norfolk) between the 18th and 20th; in central London on the 19th; in Hereford and at Hilbre Island (Cheshire) on the 20th; in Cambridgeshire on the 21st; at Newport (Monmouth), Ruxley (Kent) and Hoylake (Cheshire) on the 22nd; in Liverpool on the 25th; and at Bolton (Lancashire), Peak Hill (Devon), Porlock Marsh (Somerset), Machynlleth (Montgomery) and Lundy (Devon) on the 26th. On 27th September, Blue and Great Tits were seen moving west at Glenthorne on the Devon-Somerset border, and on the 28th nine Blue Tits were flying high south-west at Woodhay Down (Berkshire). Blue Tits reached Bardsey (Caernarvonshire) on the 29th and Skokholm (Pembrokeshire) and the Calf of Man on 1st October, when an increase was observed at Appleby (Westmorland). These reports suggest a northerly and westerly spread, but they are too few to establish this and some of the increases may have been entirely due to local movements of British birds.

*Records are too numerous to be given in full, but Appendix A in Part 2 will give the numbers recorded at observatories and other coastal stations where regular or frequent watches were kept, and many of the county reports include full details.

Coal Tit records are fewer, but, as the species is much less common or absent in many areas, probably more significant. The first were seen at Alvecote Pools (Warwick) on 16th September, in central London and at Porton Down (Wiltshire) on the 19th, at Sand Point (Somerset) on the 21st, at Cholsey (Berkshire), Newport (Monmouth) and Amington (Warwick) on the 26th, and at Lundy and Skokholm on 1st October. Further north, there were marked increases west of the Pennines a few days after the east coast influx—at Manchester on the 20th, at Birkdale (Lancashire) and Hilbre Point (Cheshire) on the 22nd, at Burnley (Lancashire) on the 25th, at Nantwich (Cheshire) and Bardsey on the 29th, and at the Calf of Man on 4th October. A movement across from the east coast seems possible, but there were no records of Coal Tits in unusual numbers inland in Yorkshire until October (see also Appendix B).

Although few Continental birds were identified in these coastal movements which began in mid-September (partly due to the difficulties of racial identification, which are discussed in Appendix B), it is believed nevertheless that in most cases an invasion from the Continent is represented. Firstly, there was the almost simultaneous appearance of numbers of tits at many places on the east and south coasts, particularly significant in the case of the Coal Tit. Secondly, birds were reported on vessels at sea, e.g. Blue and Great Tits appeared on the Smith's Knoll light vessel (26 miles from the Norfolk coast) on 20th September, a Blue Tit alighted on a trawler off the East Anglian coast in late September, and small parties of Blue and Great Tits were seen moving north each afternoon in September and the first ten days of October by an observer on a ship some 14 miles S.S.W. of Portland (Dorset). Thirdly, there were reports of birds coming in off the sea at, for example, St. Catherine's Point (Isle of Wight) and Sandwich Bay (Kent). Lastly, this initial movement was largely confined to the east and south coasts; the occasional birds on the west coast in September can probably be ascribed to local wandering or movements across the country.

Coastal movements in late September

There was a distinct lull in most coastal areas from 24th to 26th September, when a depression moved from S.W. Ireland across Cornwall and the Channel. However, during the night of 26th/27th September a ridge of high pressure passed south, and in the next two days there was a considerable movement over a restricted area on the south coast. On the 27th 447 Blue Tits, with some Great and Coal, were counted travelling N.W. at Sandwich Bay, and at Portland some two hundred Blue Tits (with odd Great) were seen in the early morning flying in at about sixty feet; many landed for a time before continuing

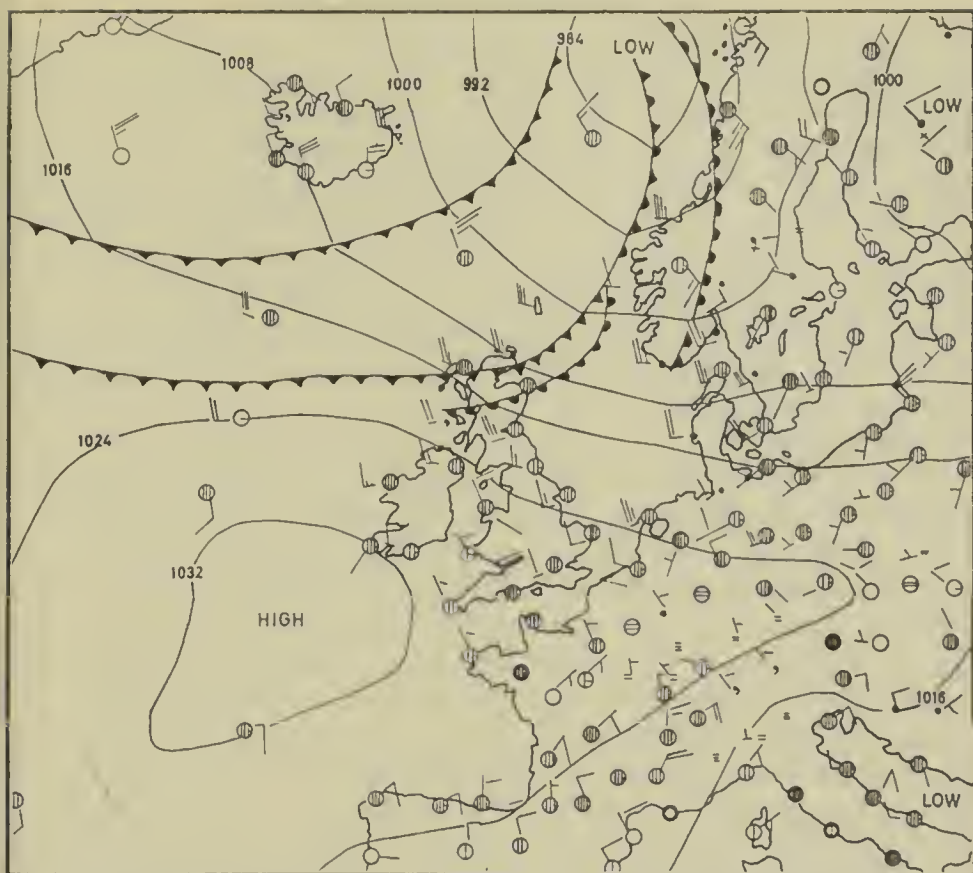


FIG. 1. Weather situation at 06.00 hours on 27th September 1957. Marked movements of tits (*Parus* spp.) on parts of the south coast of England

north-west. On the 28th an even larger passage occurred at Portland, with over 460 Blue Tits, 27 Great and one Coal moving mainly north-west; there were many parties of Blue Tits also going north-west at Titchfield Haven (Hampshire) and others were seen coming off the sea and coasting west at St. Catherine's. No special movements, however, were recorded at Dungeness, Lancing Beach or Shoreham at this time, and the others ceased after the cold front of a small depression passed over England on the night of 28th/29th September.

This short but intense burst of movement, involving much higher numbers of birds, seems to have been closely connected with the ridge of high pressure over the Channel and N.W. France. In contrast to much of N.W. Europe and Britain north of a line from the Thames to Cardigan Bay, where there was considerable cloud, the night skies in the Channel area were clear and the early morning movement occurred as it became overcast (see Fig. 1). It seems likely that most of the tits involved came from adjoining areas in N.W. France and Belgium, and that birds were then moving on both sides of the Channel, for the first invasion at Ushant (Finistère) was noted on the 27th.

Movements on the east and south coasts in early October

Numbers on the south coast remained fairly low in the first days of October, but there was some activity on the east coast, e.g. a northward movement of Blue Tits at Spurn (Yorkshire) on the 1st, an increase at Gibraltar Point (Lincolnshire) on the 2nd, and tired Blue Tits seen feeding among the grasses at Whitley Bay (Northumberland) on the 4th. There were the beginnings of a much larger movement on the 5th, when numbers of Blue Tits rose at Portland, many were seen at Titchfield Haven and St. Catherine's Point and there were apparently fresh arrivals of Blue and Great Tits at Bradwell (Essex). This soon developed into the largest and most extensive of all the coastal movements.

On 6th October there were reports of influxes from Northumberland in the north-east right round the coast to the Isles of Scilly in the south-west. Although Monks' House (Northumberland) reported no unusual numbers of Blue Tits during the autumn, five Coal Tits appeared there on the 6th, at Whitley Bay Blue Tits were seen feeding along a $\frac{3}{4}$ -mile stretch of coast, and tired immigrants were seen at Graythorpe (Co. Durham). Across the Tees, at Redcar (Yorkshire), passage north-west of Blue Tits, with some Coal, was observed and Spurn recorded about fifty Blue Tits, with one Coal and one Great. The movement was still more striking in Lincolnshire, where a marked passage of Blue Tits was seen at six places on the coast, following the shore line between north and west in the north, and between south and south-west in the south (see Fig. 4). In N. Kent, Blue Tits were seen at Shellness and a number came in off the Thames at Cliffe. At Dungeness the highest numbers of the autumn were recorded, with 275 Blue Tits, 50 Great and 40 Coal moving north-west (12 Coal Tits trapped were considered to be Continental birds). Further west, in Hampshire and Dorset, Blue Tits were seen moving between north and west over Southsea Castle and north at St. Catherine's, Portland and Studland Heath and were numerous on the cliffs and in the town at Swanage. A small westward movement was observed at St. Ives (Cornwall), and the main invasion now began at St. Agnes (Isles of Scilly) when 25 Blue, 20 Great and 60 Coal Tits arrived at 11 a.m., most of the Coal Tits leaving the same day.

On 7th October the pattern along the east coast was much the same (two Blue Tits were seen on Holy Island, Northumberland, and the first flocks noted at Walberswick, Suffolk), but on the south coast the movement was more marked further west. Numbers at Dungeness dropped sharply, but at Portland the Blue Tit total trebled and there were 150 Great, appearing mainly after 9.30 a.m. At St. Ives, mixed flocks of Blue and Great Tits, some hundreds in all, passed over in a south to south-east direction and at St. Agnes numbers of Great and

Blue increased. There were the first reports of the invasion in the Channel Islands, when about 200 Blue Tits, with similar numbers of Great and some Coal, arrived from the north-west at the small island of Lihou, while many Blue Tits and some Great were seen on Sark (Jersey had a large passage of both species a little later, between 12th and 23rd October).

The coastal influx continued on 8th October. Numbers were lower on most of the east and south coasts, but Christchurch Harbour (Hampshire) and St. Agnes had their peaks of the Blue Tit movement, there was a small influx at Cley (Norfolk) and six Blue Tits were reported from the Haisboro lightship; passage over St. Ives continued. On the 9th numbers generally on these coasts declined still further, although St. Agnes had its highest total of Great Tits.

This movement in early October was the largest and most extensive of the autumn. Blue Tits were by far the most numerous species again, but the proportion of Great Tits rose substantially and there were occasionally large numbers of Coal Tits. As in the previous movement, the passage was associated with an anticyclone over the British Isles. This was over S. Ireland at the beginning of the month and moved gradually eastwards until on the 6th, the day of the peak, it was centred over the Channel and extended across central Europe (Fig. 2). A low pressure area covered all Scandinavia and it seems unlikely that many birds from this area took part. On 7th October the anticyclone moved across to S.E. Europe leaving a ridge across England and the adjacent parts of the Continent, with little cloud over S.W. England and adjoining areas of France on the 8th (Fig. 3). This may have been partly responsible for the more marked movements then noted further west, although coasting would have increased numbers there also.

Movements on the west coast in October

The small increases in late September at west coast observatories may have been largely due to wandering British birds, perhaps joined by some Blue and Coal Tits which had moved across from the east coast. The first marked increases in the west were in early October and, although numbers were much smaller than on the east and south coasts, there are signs of double peaks at Lundy, Skokholm and Bardsey (see Appendix A) which at least suggest that the two large movements in late September and early October in the south and east were reflected afterwards in the west. Thus Lundy reported peak figures for Blue Tits on 4th/5th October, with a secondary peak on the 9th, whilst Coal Tits increased on the 7th and reached a maximum on the 11th. (On the 4th, too, Blue Tit movement was noted higher up the Bristol Channel, when a party flew in from the sea at Steart Point,

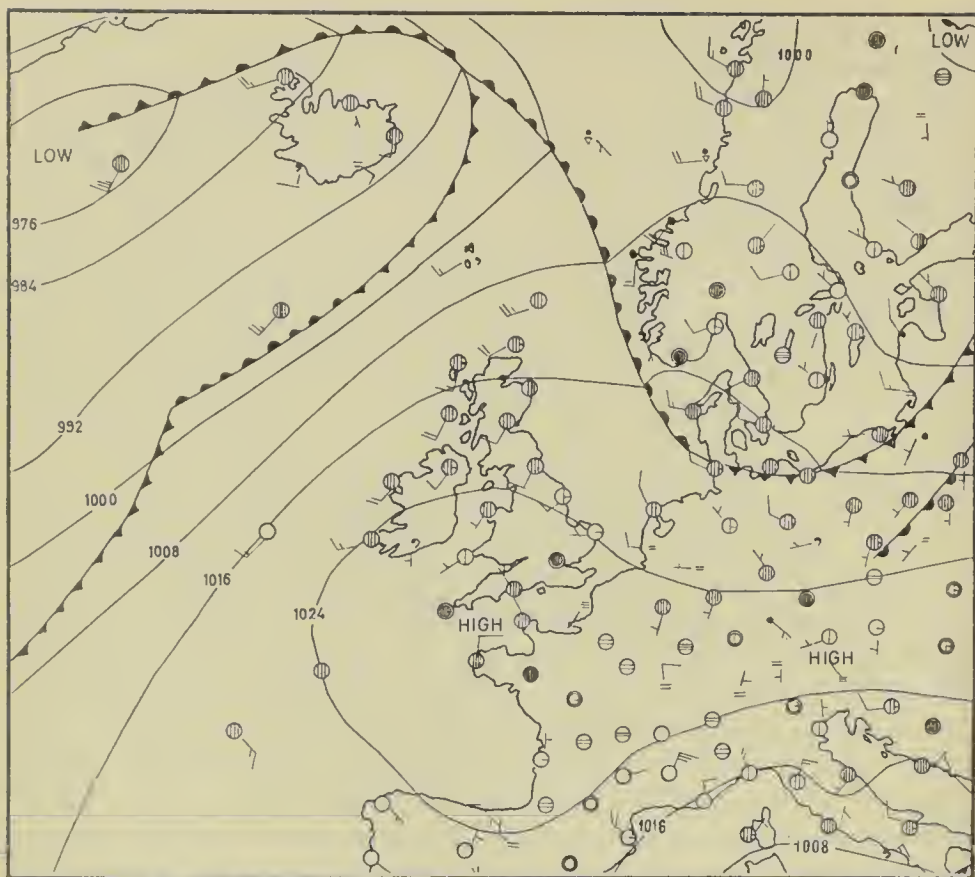


FIG. 2. Weather situation at 06.00 hours on 6th October 1957. Peak movements of tits (*Parus* spp.) in many coastal areas in eastern and southern England from Northumberland to the Isles of Scilly

Somerset, and all three species were seen on Steep Holm between the 4th and 6th.) At Skokholm the highest Blue Tit figures were noted a little later, on the 12th and 15th-16th, and Great Tits reached a peak on the 9th with smaller peaks on the 16th and 19th. Most birds apparently soon left, as few were re-trapped. Large numbers of both species were seen along the coasts of Cardigan on the 13th and of Pembroke on the 14th, whilst on 19th there were some 300 Blue Tits along a $\frac{1}{4}$ -mile stretch of the coast opposite Skomer. At Bardsey (Caernarvonshire) the peak day for all three species was 8th October (with about 120 Coal Tits, 75 Blue and 15 Great), followed by a secondary peak for Blue Tits on 19th.

There is evidence that a few tits may have reached Ireland in October. Small numbers of Blue and Great occurred at Great Saltee (Co. Wexford) from the 9th, when increases in Blue Tits were also reported from Co. Wicklow. At Blennerville (Co. Kerry) there were considerable increases in all three species on the 14th. Copeland

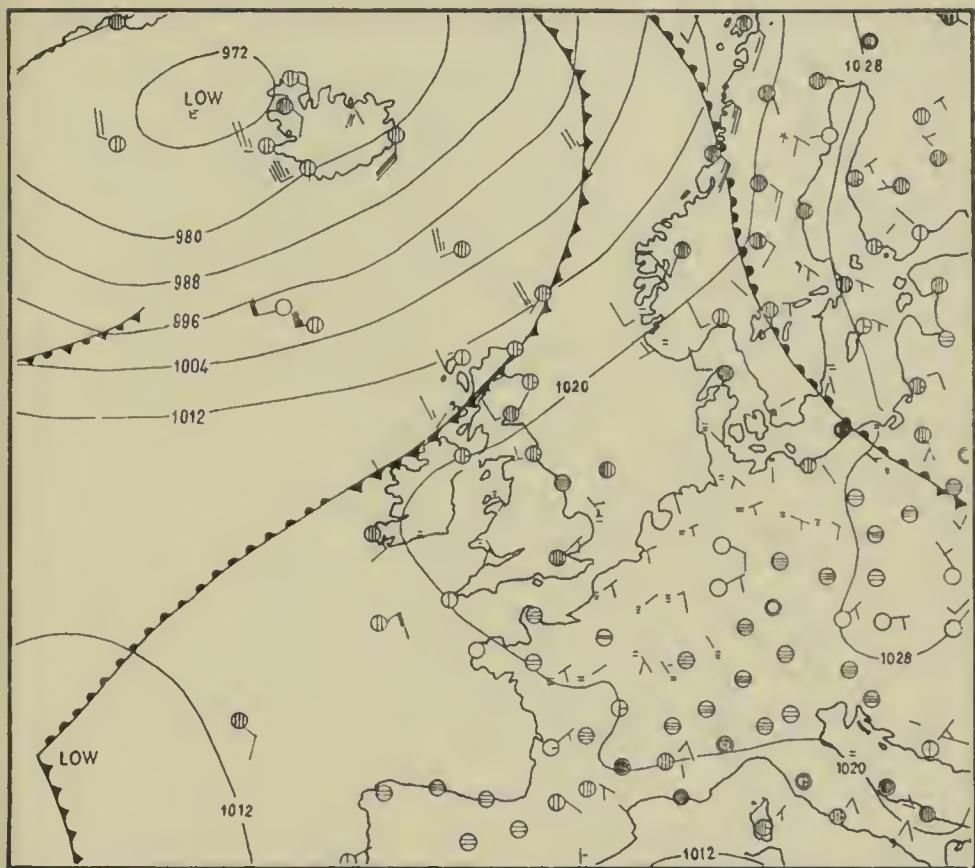


FIG. 3. Weather situation at 06.00 hours on 8th October 1957. Large irruption of tits (*Parus* spp.) continuing, but movements more marked in the western half of the English Channel

observatory was open for only a few days in October and there were no signs of any very marked invasion. Two ringers in Belfast reported some increase, mainly of Blue Tits, from mid-October to December (though there were also earlier, smaller increases presumably of local birds), and large numbers of Blue Tits were seen on the Calf of Man for the fortnight or so after 1st October. Evidence of movement to the south-east coast of Ireland is provided by a Blue Tit recovered off Co. Wexford on the 12th after being ringed at St. Agnes four days earlier, but, although enquiries were made, there is no suggestion of unusual numbers along the west coast apart from Co. Kerry.

Coastal movements in late October and November

In Yorkshire, Spurn had a big increase in Blue Tits on 15th October and recorded its highest figures for all the three species as late as the 19th. Similarly, at Cleethorpes in Lincolnshire the numbers of Blue Tits were also higher at this time, with peak figures on the 15th and

24th.* Passage was seen on a number of days later in October at Redcar (Yorkshire), mainly north-westerly, and at Hartlepool (Co. Durham), with small numbers of Blue Tits coming in off the sea from the south-east. On the 13th there was a considerable movement on the Norfolk side of the Wash: 600 were reported moving south at Hunstanton in one and a half hours, while 40 per hour were estimated to be passing at Holme and about 300 per hour at Snettisham. Walberswick (Suffolk) had its peak trapping figure for Blue Tits on 20th October.

On the south coast, however, at both Portland and Dungeness, numbers, though often considerable, never reached the early October figures. There was a tendency for an increase at Portland a day or so later than at Dungeness, suggesting westerly coastal movements (see Appendix A). At Lancing (Sussex), however, the peak was of 64 Blue Tits moving *east* on the 14th, and it is interesting, in view of Walpole-Bond's (1938) account of easterly movements of this species along the Sussex coast in autumn, that at Lancing they were seen moving both east and west, sometimes in both directions on the same day. Between 12th and 27th October movements or increases were reported at many places from Pagham Harbour in Sussex to St. Ives in Cornwall (where six Blue Tits flew north out to sea on the 13th), and on the 20th several hundred Blue and Great Tits were seen on and near the sea-wall between Birchington and Reculver in N. Kent. Numbers of both these species rose at Skokholm (Pembrokeshire) on the 24th, and just before this there were slight increases at Bardsey (Caernarvonshire) of all three of the tits concerned.

In November there were a few reports of movements from scattered places on the south and east coasts during the first week, but after this there do not appear to have been any important influxes.

Inland movements in the South and Midlands from October to mid-December

Inland, the movements and increases were recorded throughout October and November and into December. Many areas in England and Wales were markedly affected, and a few in Scotland and Ireland. The general picture is conveyed more readily by the maps (Figs. 4 and 5) and in the following summary only the more important records are mentioned.

Most reports were from England, in the south below a line from the Wash to the Severn, and in the north above a line from the Humber to the Dee. They were particularly numerous in S.E. England, where increases of resident birds after the breeding season were most often noted and the Continental influx was most marked. Tits were seen

*Radar showed a W.S.W. movement of birds (species unknown) off the Dutch coast on 15th October (Lack 1959b).

IRRUPTION OF TITS IN 1957

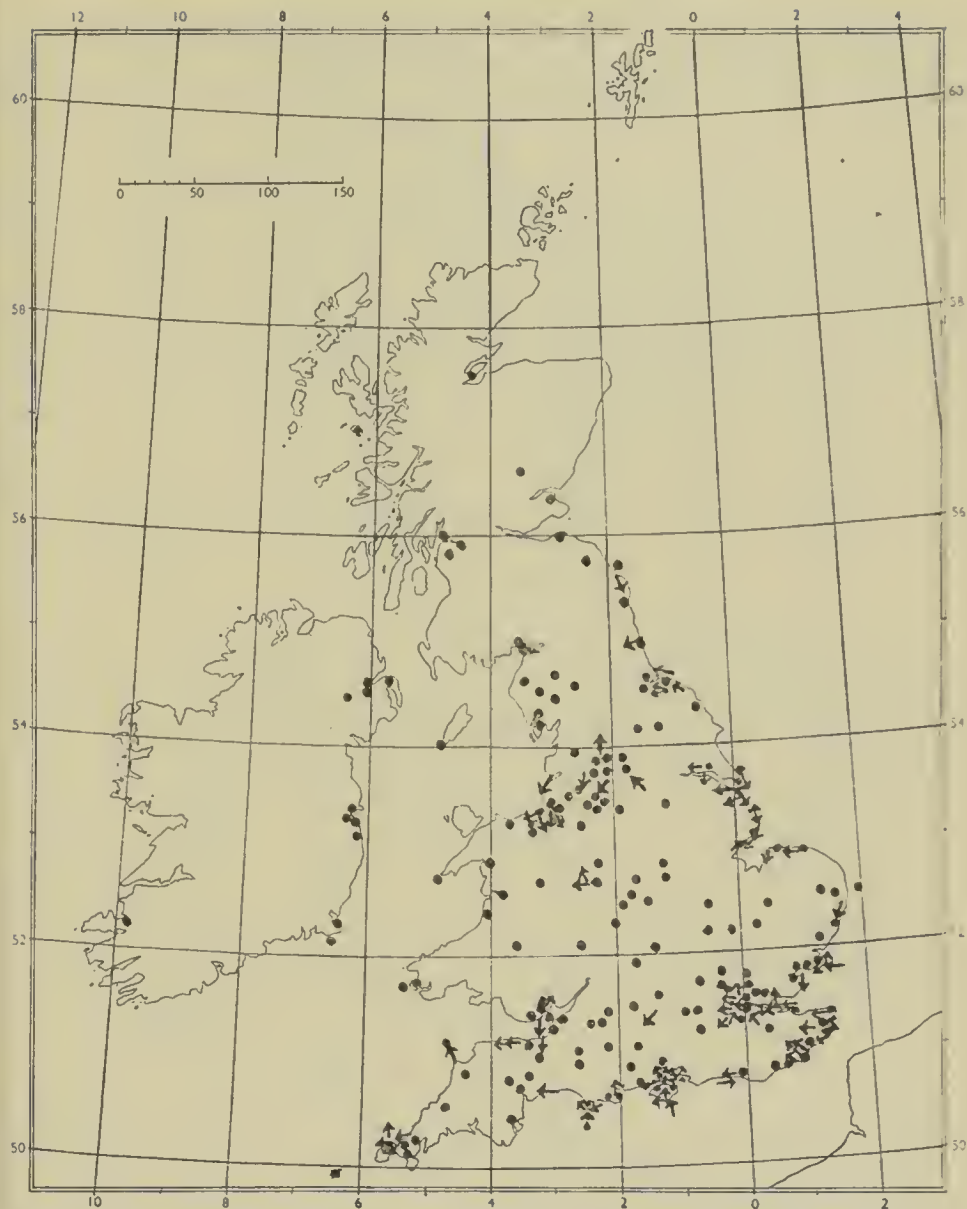


FIG. 4. Localities where movements and increases of Blue and Great Tits (*Parus caeruleus* and *major*) were reported in Great Britain and Ireland from 14th September to 30th November 1957

passing up the Thames estuary in September and October, and on 25th October Coal Tits were observed moving west near Canterbury (Kent). In central London the coastal invasions were reflected in both numbers and species a few days later, and movements (mainly of Blue Tits) to north-east and west over the S. London suburbs occurred between 23rd September and 3rd November (see Cramp 1960 for fuller details). In the grounds of Southampton University numbers of Blue Tits rose to over eight times the normal in September and October, about 90% being first-winter; then, however, they fell

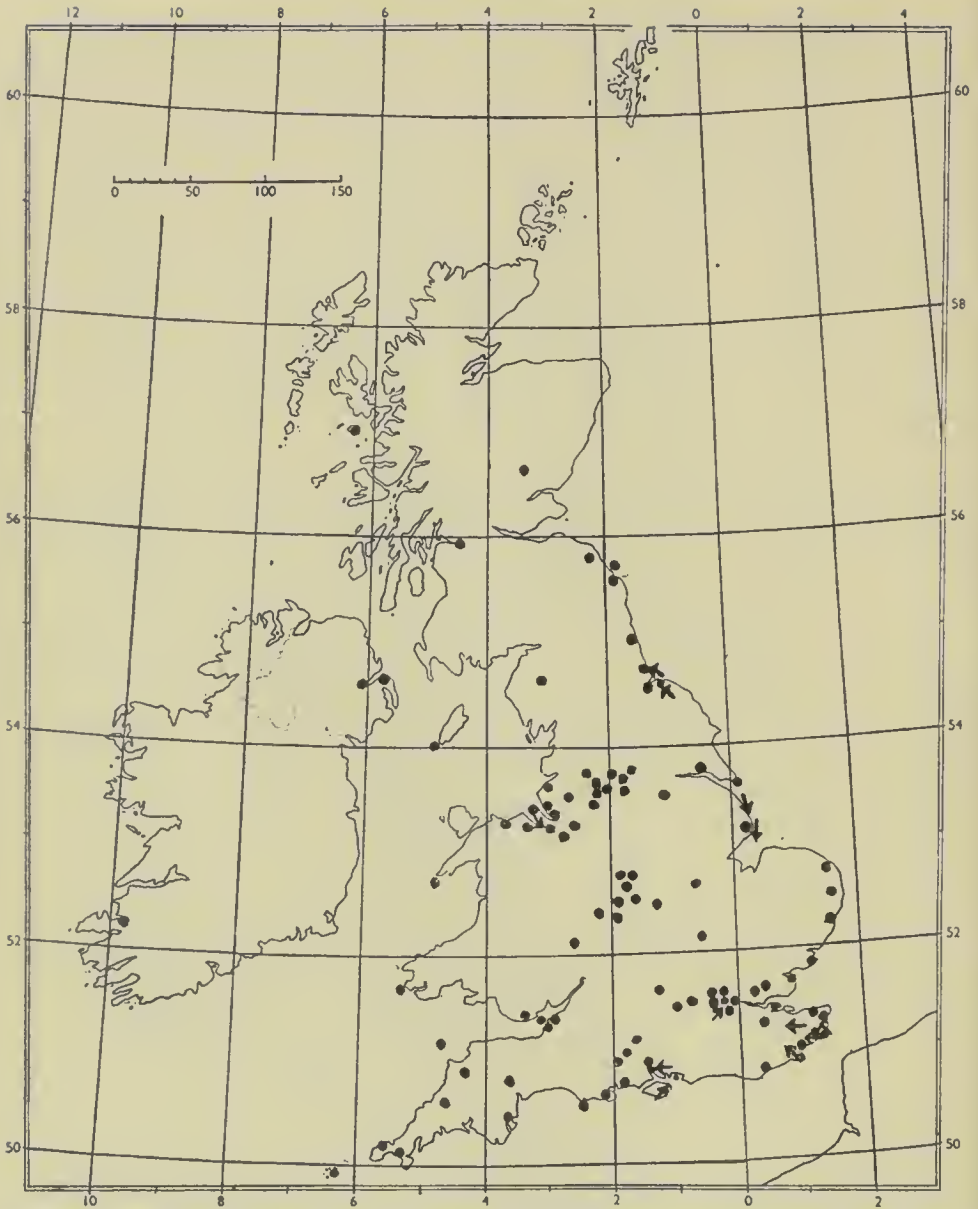


FIG. 5. Localities where movements and increases of Coal Tits (*Parus ater*) were reported in Great Britain and Ireland from 14th September to 30th November 1957

sharply below the seasonal normal in early November when adults out-numbered first-winter birds. Near Bodmin (Cornwall) the Blue Tit invasion began towards the end of the first week in October; odd Coal Tits occurred in gorse on Bodmin Moor in November, and at Helston there was an influx of this species at the end of October.

At Newport (Monmouth) the invasion of the built-up areas began in mid-September; on 14th and 15th October parties of Blue Tits were seen flying N.N.E. and N.E. over the mouth of the Usk. In Berkshire, at Cholsey, numbers of Blue and Great Tits trapped rose sharply

from 2nd to 10th October, with a further increase on 10th November, and Coal Tits occurred in small numbers from late September to early December, whilst at Binfield an increase of Blue and Coal Tits was noted in the last ten days of October.

In the Midlands, except for an increase in Blue Tits in the centre of Birmingham and at Nuneaton, and a strong passage of tits, including Coal, at Bedford in early October, there appears to have been a less marked invasion of cities and towns. At Hail Weston (Huntingdonshire) numbers of Blue and Great Tits occurred in late November and Blue Tits increased at Corby (Northamptonshire) on 10th October. At Frankley (Worcestershire) the invasion of Blue Tits began on 13th October, and near Wellington (Shropshire) movements of this species were seen on 29th September and 6th October, with an influx of Great Tits in the first half of October.

Inland movements in the North from October

In N. England the influx of tits was on a large scale in October. Coal Tits were seen in a park (where normally absent) three miles from the centre of Manchester from 20th September until observations ceased on 4th October, and in the city itself Blue Tits fed on waste lots and buildings from 1st October until November. In Burnley (Lancashire) Blue Tits occurred in the centre in late September and October, while around Bolton Blue and Great Tits increased in late September and again at the end of October, and Coal Tits were unusually abundant. On the moors north of Rochdale a flock of Blue Tits was seen around a hill farm on 12th October and on the 19th others were noticed moving south down a valley near-by. Coal Tits increased at Todmorden and 70 were recorded at Bacup on 4th October.

At Formby, on the Lancashire coast, Blue and Great Tits were moving south-west on 13th October. Further south, the centre of Liverpool was invaded during the third week of September and at Garston Docks there were unusual numbers of tits, mainly Blue, from 25th September until 10th October, with some parties flying over south or south-east. At Birkenhead School (Cheshire), peak trapping figures for both Blue and Great Tits were obtained from 5th to 8th October.

In Yorkshire increases were recorded near the Pennines at Barnoldswick and Austwick, and at Hardcastle Craggs there were over 200 Coal Tits on 2nd October and large numbers of Blue and Great Tits on 4th November. Blue Tits appeared in the centre of Leeds on 1st October and further down the Aire, near Castleford, parties were seen moving W.N.W. and N.W. on 2nd and 13th October. At Malham Tarn on 3rd October several groups of Blue Tits were observed going northwards over bare moorland. There were fewer

reports from the south Pennines, but on 15th October small numbers of Blue Tits were seen passing south-west near Sheffield. Coal Tits occurred in suburban gardens and built-up areas, e.g. at Leeds and Doncaster. Blue Tits increased in the centre of Hull, and on the outskirts they were seen flying both west and south across the Humber on 13th October. Marked increases occurred in the Tees area: at Middlesbrough flocks of Blue Tits were noted in the main streets from mid-October, and at Thornaby Blue and Great Tits were trapped in increased numbers and the first Coal Tits seen. Blue Tits were unusually numerous in the country areas of N. Yorkshire and S.E. Durham.

When the reports for the north of England are considered as a whole it seems likely that some of the birds which arrived on the east coast from Northumberland to Lincolnshire moved west and north-west across the country. In the north, Great Tits were less frequent and Coal Tits more so than in the south of England, agreeing with the pattern at the coastal observatories. Thus, at Spurn, Coal Tits formed 17% of the total reported and Great Tits only 11%, whereas at Portland and Dungeness (combined) there were only 3% Coal and 17% Great. The concentration of reports in and near the Aire Gap may indicate that some birds used this route across the Pennines. The coastal movements in Lancashire suggest that some birds turned south on reaching the sea. At Hilbre Island (Cheshire) tits were seen both flying up the Dee and crossing to Wales. There increases, especially of Blue Tits, occurred at Northop (Flint) in late September and early October, and at Old Colwyn (Denbighshire). This coasting movement may have continued to Bardsey. It seems unlikely that any large numbers crossed to Ireland from N. England.

Some birds, however, moved north, as the Malham Tarn observations show and the invasion was noted on a considerable scale in the Lake District. At Appleby (Westmorland) an influx of Blue Tits occurred about 1st October and on an exposed hill-top near-by a flock was seen making north-east on 11th December. In the Windermere area, there was a big invasion of Blue and Great Tits, with some Coal. At Elterwater (Westmorland) large numbers of noisy, excited Blue Tits were seen between 21st October and 16th November, and this species increased at Cockermouth (Cumberland).

On the north side of the Solway Firth, Blue Tits were seen moving west at Caerlaverock Marsh in early October and small flocks noted near the shore between Annan and Dumfries. Around Edrom (Berwickshire) this species was very numerous and Coal Tits were commoner than usual. No exceptional movements of tits were reported from the Isle of May and none from Fair Isle. In late October parties of Blue Tits were seen feeding on the rocks at North Berwick

and one appeared on a boat in Leith Docks (Edinburgh). In Glasgow an observer noted an increase of Blue and Great Tits in October, with later influxes, including some Coal Tits, in November; and at Kilcreggan (Dunbarton) an invasion of Blue Tits began in the last ten days of October and lasted until mid-November. At Pitlochry (Perthshire) all three species increased in the latter half of November and early December. At Avoch (Ross) the first influx of Blue Tits was from 21st September until 20th October, with others in late October and mid-November. The most striking Scottish report, however, is from the Isle of Rhum (Inner Hebrides); here large numbers of Blue, Great and Coal Tits arrived between 20th and 28th October, and remained until 9th November, when their numbers began to diminish. On 16th November Blue Tits were numerous along ditches, stone walls and in the fields in N.W. Islay (Inner Hebrides).

Movements of other tits

Other species of tits occurred in much smaller numbers. A few Long-tailed Tits (*Aegithalos caudatus*) were reported in September, mostly late in the month, from places on the south coast, and there were increases in two or three inland districts in the south. In October, however, there were some more significant coastal influxes: some twenty reports, mostly of a dozen birds or less and widely scattered, came from Co. Durham, Yorkshire, Lincolnshire, Suffolk and Kent in the east and south, and from Lundy, Skokholm and Hilbre (November) in the west. Increases inland from October onwards were observed in a dozen counties in England and two in Wales. In Scotland a few arrived on the Isle of May on 20th October and on Rhum from the 20th to the 28th. Increases were also noted in Ireland (Cos. Wicklow and Kerry in the first half of October) and in the Channel Isles (Guernsey and Jersey). All movement observed, inland or on the coast, was north or north-west. No birds of the Northern race were identified, but three mainly white-headed birds were seen at Dungeness on 7th October and one in Montgomery on 1st November.

The only other species of tit involved was the Marsh Tit (*Parus palustris*) and this was reported in even smaller numbers. Up to three were seen on the coast at four places in S. England and there were a dozen records of increases in widely scattered places inland, all in England.

THE POSITION DURING THE WINTER

The coastal influxes had largely ended by early November, and the movements through the country by early December. Later in

December and in January, however, although the numbers had fallen below the autumn peaks they were still high in many parts of England and Wales. The main exceptions were in Hampshire, where they were said to be below the normal winter level, and in some southern and eastern coastal counties, where no excess was reported.

Some birds spent the winter in unusual places. For example, parties of Blue Tits were reported from woods on Exmoor up to 1,250 feet and a flock was fed with bread by workmen at a clay works near Bodmin (Cornwall); others were seen feeding on the shingle in Hampshire and on sea-buckthorn in Somerset in the latter half of December. Small numbers wintered on islands—Skokholm, Bardsey, Great Saltee, Lundy, Steep Holm and the Calf of Man.

In the few places in Scotland where autumn increases were reported winter numbers tended to remain high. In some remoter districts birds seem to have wandered in search of food. Thus there was a fresh influx of Great, Long-tailed and Coal Tits on Rhum in early January; they soon left, to be followed by an increase of Blue and Coal in late February. Near Achiltibuie, in Wester Ross, where tits had not been seen before in winter, a few Great and Blue, with one Coal, appeared in January and February, and at Avoch, in Easter Ross, some Great arrived in late January and many Blue in February. Numbers also remained high in some places in Ireland, and in Guernsey and Jersey.

RETURN MOVEMENTS OF TITS IN 1958

The return movement seems to have been gradual, beginning in January and lasting into March and April; on the south coast it extended even to mid-May. The arrival of large numbers of Blue Tits at Beccles (Suffolk) just after Christmas may have been due to wandering for food, but by the first week of January an increase of all three species was noted at Shipley (Yorkshire), after few had been seen since September. Numbers of Blue Tits rose sharply in Bloomsbury, central London, on 18th January, remaining high until early March, and there was an influx of Blue and Great Tits at Kington (Herefordshire) between 31st January and mid-February. A passage of Blue Tits was observed along the River Eden, near Penrith (Cumberland), at the end of January and in early February. On 9th February the numbers of Blue and Great Tits trapped at Bleasby (Nottingham) rose sharply, and there was an influx of clean Blue Tits into central Glasgow on the 22nd. In London again, increased numbers, indicating return passage, were reported from Greenwich Park from 9th February until 9th March, and in Holland Park from 2nd February until 23rd March. In other areas, the return was brought to the attention of observers by a drop in the high numbers of the

winter; this was noted at, for example, Binfield (Berkshire) and Bodmin (Cornwall) in February, at Pitlochry (Perthshire) by mid-March, and at Northop (Flint), Tamworth (Staffordshire) and Nuneaton (Warwickshire) by the end of that month. At Woodbridge (Suffolk) trapping totals of Blue and Great Tits increased noticeably in February and March, and the same applied to Blue Tits at Malmesbury (Wiltshire) on 30th March. On Skokholm and Bardsey, in the Irish Sea, the last tits were seen in April.

The strongest evidence of return is from the east and south coasts. At Dungeness (Kent) an increase in the wintering Blue Tits was noted in late January, and from then on fluctuating numbers were reported, with peaks of 20-40 on 2nd, 28th, and 29th March, and 9th, 10th and 19th April; there were also 23 as late as 15th May. Several birds trapped there in the autumn and not seen in the intervening months were caught again in late January and February; some of these then stayed in the area for periods of up to a month before leaving. The first important increase in Great Tits at Dungeness occurred in early March and this was followed by a very sharp rise late in the month, 70 being recorded on the 29th. Numbers were lower in April, with a maximum of 15 on the 19th, and there were only two May records. A single Coal Tit appeared on 4th May.

At Littlestone (Kent), four miles to the north, Blue and Great Tits were trapped from 7th February to 26th April. There was a big increase in Great Tits in late March, corresponding with the sharp rise at Dungeness, and 64 were ringed on the 29th.* Three birds ringed in late March were later recovered in N. France, Belgium and W. Germany. On 30th March over 130 tits, mainly Great but including some Blue, were seen coasting east at St. Margaret's Bay (Kent); this was the only striking tit movement observed there during a daily watch from 19th March to 19th April. On 29th and 30th March many Blue Tits, with Goldcrests (*Regulus regulus*), were seen at East Tilbury (Essex). Blue Tits were watched flying out to sea at Dungeness on 29th March and 25th April, and two Great Tits at Belle Tout (Sussex) on 4th April.

At Portland (Dorset) Great Tits were seen between early March and 7th May, and Blue Tits from early March to 16th May (only two Coal Tits were reported, in April). The peak numbers were again in late March, with twelve Great and over sixty Blue on the 30th; lesser peaks for Blue Tits were on 5th, 7th and 27th April and 4th May. Most passed over high, without stopping; a few were seen to leave

*Heavy passage observed in Holland and Germany in late March is described later. Radar observations in N. Norfolk showed that large movements were scarce in the cold March of 1958 until, with the arrival of milder weather in the last three days, large easterly passage occurred (Lack 1959a).

S. or S.W. over the sea, but many were coasting both east and west. At Spurn (Yorkshire) the return was observed on a smaller scale and it started later. Small numbers of Blue and Great Tits were seen there on several days in the early months of the year, but it was not until April that both occurred daily—Blue from the 4th to the 20th, and Great from the 5th to the 19th, with maximum numbers of twelve and four respectively. No Coal Tits were reported. A Blue Tit ringed at Spurn on 6th April was recovered in N. France six days later.

Coastal watching was much less intensive than in the autumn, but it is apparent that return movements of Blue and Great Tits occurred (although very few Coal Tits were seen), and that they were most marked on the south coast, especially the south-east. The observational evidence, and the ringing returns (discussed later), suggest that most birds moved towards the south and south-east to make the shortest sea-crossings. Numbers were in all cases well below those recorded in autumn. Presumably many must have died during the winter months, but it is possible that some stayed to nest in this country.

ATTACKS ON MILK-BOTTLES, PAPER AND OTHER ARTICLES

The irruption of tits was marked by behaviour which brought it forcibly to the attention of many householders. Raids on milk-bottles increased sharply, paper-tearing was on a scale not known since 1949, and there were attacks on putty, textiles and a host of other articles.

Milk-bottle attacks

The opening of milk-bottles by tits and other species is not, of course, new. The start and gradual spread of this habit has been fully described by Fisher and Hinde (1949, 1951). As a result of appeals on the radio and in various publications, 228 separate reports of birds attacking milk-bottles in 1957-58 were received, and the geographical distribution of these at places more than 5 kilometres apart is shown in Fig. 6. This may be compared firstly with the movements and increases recorded from mid-September to November (Fig. 4). The general pattern is very similar, for both cover most of England, parts of Wales, some places in Scotland (mainly the central lowlands) and Ireland (mostly on the east coast). The main differences are the wider spread of milk-bottle opening in the English Midlands (suggesting the possibility of unreported movements) and the relatively few attacks in Lincolnshire and adjoining areas despite the big coastal increases in that part of the country.

Secondly, Fig. 6 may also be compared with the map of milk-bottle attacks in 1947 (Fisher and Hinde 1949, p. 350). Again the general pattern is not dissimilar, but in 1957 there was a relatively high pro-

IRRUPTION OF TITS IN 1957



FIG. 6. Attacks on milk-bottles by tits (*Parus* spp.) and other birds at places more than 5 kilometres apart during the winter of 1957-58 (compare distribution with Fig. 4)

portion of cases in the south-western counties of England, rather more in Wales (especially in central coastal areas), and fewer in N.E. England and Scotland. In addition, 1957 provided a record of milk-bottle opening in the south of Ireland, in Co. Cork. Of the 1957-58 reports, 91 stated whether or not such attacks had been noted before: 49 of these represented outbreaks observed for the first time. This suggests that during the invasion there was a considerable increase in this already widespread habit. Such new attacks were well scattered over the

country, but were more frequent in the Pennines, in S.W. England and around Dublin. In 145 reports the species concerned was identified—Blue Tit 97, Great Tit 42, Coal Tit 3, Robin (*Eritacus rubecula*) 2 and Starling (*Sturnus vulgaris*) 1. In addition, one observer claimed that a thrush (? sp.) was responsible and there was a second-hand report of a Jackdaw (*Corvus monedula*) which, if confirmed, would be an addition to the species mentioned in the 1947 enquiry.* In one case a Starling was said to have drunk the milk after the tits had opened the bottle.

In a number of instances the observer reported the periods during which the attacks occurred, and this information is summarised in Table I. Fisher and Hinde pointed out that although attacks on milk bottles occur throughout the year they are more prevalent in the winter months, adding that this might be due both to the increased need for fats during severe weather and to the fact that tits are commoner in urban and semi-urban areas at that time of year than they are in the

TABLE I—MONTHS OF ATTACKS BY TITS (*Parus* spp.) AND OTHER BIRDS ON MILK-BOTTLES, ETC., 1957-1958

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April
Milk-bottles	2	2	13	46	86	52	29	18	23	7
Paper	—	2	14	36	40	17	8	3	—	—
Putty	—	—	4	8	13	8	5	2	3	—

summer. In 1957-58, however, milk bottle attacks were most common from October to December when the numbers of tits were at their highest, and not in January and February when the weather was most severe. In quite a few reports it was stressed that the attacks lasted for only a short period coinciding with the invasion and ceased when numbers returned to normal. Even more striking are those instances where the outbreaks appeared to coincide both with the autumn irruption and with the return movements in spring. Thus, for example, at Binfield (Berkshire) the attacks lasted until Christmas and then broke out again in March; at Malmesbury (Wiltshire) they occurred in November and then not until 30th March; and in Jersey after being noted on a few days in early December they were recorded again from 24th February until 14th March. The slight rise in the March attacks, as shown in Table I, may also be significant.

It would be interesting to know whether in a year with no abnormal movements of tits attacks are most frequent in the late winter, when the weather is usually more severe, or in the late autumn and early winter, when numbers would be higher. Increased attacks may be

*Jackdaws have been seen opening milk-bottles in Denmark (Hinde and Fisher 1951).

due to pressure on food supplies, caused either by hard weather or by high numbers. Fisher and Hinde found that once the habit had been recorded in a given district it usually became nearly universal there within a few years. In 1957 the late autumn attacks often ceased abruptly when numbers fell, so either the birds which remained had not learned the habit or they were not driven to make use of it. Some observers, too, stated that although attacks had occurred in the past they had been unknown for several years until they broke out again during the 1957 irruption. The attacks were often so severe that many people had to protect their milk-bottles with stones or wood placed on the cap; in one case tits were said to have moved a heavy cloth put over the bottle. There were several reports of birds following the delivery van on its rounds and attacking the contents as soon as the milkman left it. The most wholesale onslaught was at Merstham (Surrey) where 57 out of 300 bottles left at a school were opened one morning in November.

A few observers stated the colour of the milk-bottle caps attacked. Most frequently mentioned was gold (11), followed by red (6), lead, silver or aluminium (6), blue (2) and blue and silver (1). Bottles with gold caps usually contain the creamiest milk, and tits may be attracted by the appearance of the contents rather than by the cap colour. One observer who had three bottles of milk each day, two silver-capped and one gold, exchanged the caps after repeated attacks on the gold-topped bottles, but found that the Blue Tits still opened the Jersey milk although this now had a silver cap. Two other correspondents also stated that the birds still chose the Jersey milk even when the tops were switched.

Attacks on paper and other articles

Paper tearing by tits has a much longer history than the opening of milk-bottles. In 1693 Father Jean Imberdis, S.J., published a poem entitled "Papyrus" about the process of paper making, in which may be found the following lines:

"Small is this naughty Fowl, yet it can wreak
No small Destruction with its claws and beak.
For, when Paper from afar it spies,
Straightway through open Window in it flies.
Its frequent blows the sheet do quickly tear
Still sodden, and make Havoc everywhere . . .
To Gin and Snare it grows too soon inured,
And Carelessness is by Experience cured.
The Lime untouched, always the saucy Tit,
So keen its zest, to Paper straight will flit."

(From the translation by Professor Eric Laughton,
quoted in a letter to *The Times* by Owen Morshead.)

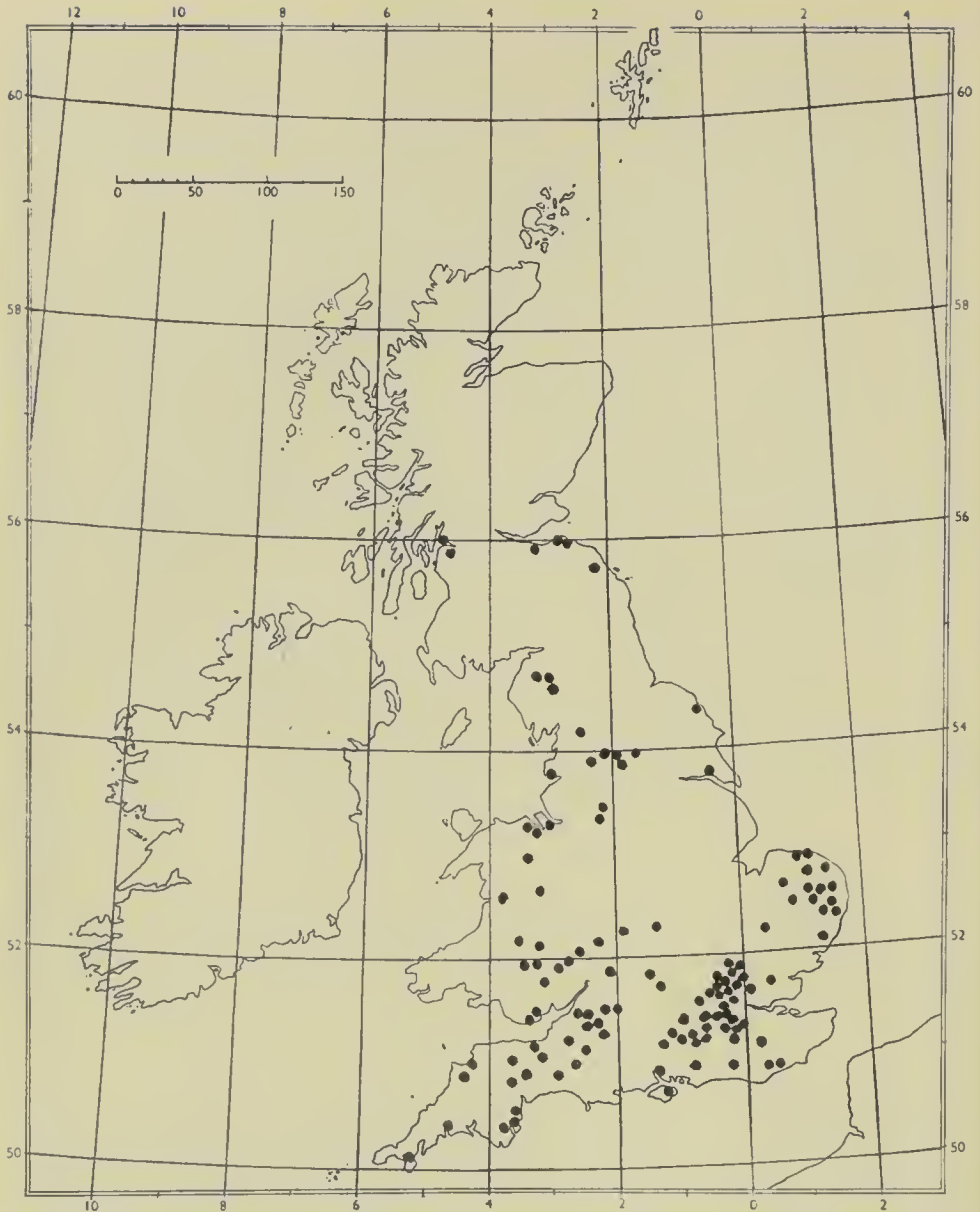


FIG. 7. Paper-tearing by tits (*Parus* spp.) during the winter of 1957-58 (compare distribution with Fig. 6)

It occurs, however, very much less frequently in most years, and even in 1957-58 only 121 cases were reported, just over half the number of attacks on milk-bottles. The geographical distribution of these attacks is shown in Fig. 7 and it will be seen that compared with milk-bottle attacks there were many fewer in the Midlands, rather fewer in Northern England and none at all reported from Ireland. Logan Home (1953) carried out a detailed investigation of the last big outbreak of paper tearing in 1949. He stated that paper tearing was much more common in the autumn of that year than at any other time within

living memory and noted that many observers commented on the great increase in the numbers of tits at that time. His analysis showed that the great majority of the attacks occurred in September, October and November, with some in August, June and December, and single cases in other months except for January and February when there were none reported. In 1957-58 (see Table I), October and November were the peak months, followed by September and December, but there were a few instances (from a much smaller total) in both January and February. The proportion of attacks occurring in the early months of the year (9%) was, however, much smaller than in the case of attacks on milk-bottles (28%) or putty (23%). A number of observers found that all paper tearing ceased abruptly with the onset of severe weather.

As in 1949, a wide variety of paper articles were attacked. The most frequently reported were wallpaper (66), books (27), boxes (20), newspapers (17), lampshades (13), notices (9) and labels (7), but there were 57 other attacks involving a very wide assortment of miscellaneous articles—calendars, silver paper, letters, photo and picture frames, parcels, blotting paper, toilet rolls, tissue paper, razor-blade packets, ringing schedules, etc. Most of these paper tearing activities occurred *inside* houses, and a number of observers commented on the persistence shown by the birds in forcing their way in. In one case the extent of the damage led to all the windows being kept firmly closed, but the Blue Tits still managed to enter through the tiny gap left by the side of the morning newspaper pushed into the letter-box. Other buildings were also entered: churches were mentioned in several reports, and in a distributor's food store in Hampshire considerable damage was done to packaged goods by large flocks of Blue Tits pecking at the labels and boxes. As in 1949 (and as also with milk-bottle opening), the species most frequently concerned was the Blue Tit (79), with Great (21), Coal (2) and unidentified tits (33). No other birds were recorded tearing paper, but some observers reported other species entering their houses, including Robin, Wren (*Troglodytes troglodytes*) and House Sparrow (*Passer domesticus*).

Once the tits were inside a house, other things besides paper attracted their attention. There were 60 such cases in all, involving curtains, upholstery, braiding, bedspreads, towels, pegs, string, buttons, pins, paper fasteners, plasticine, telephone wiring, plaster, shaving cream, candles and various items of food (butter, cheese, biscuits, fish, chocolate and sweets). One Blue Tit had a dust bath in the powder bowl on a dressing table.

In a few cases other articles besides paper were attacked out of doors. There were eleven instances of assaults on washing hanging on the line; several observers noted that the washing was damp, and one

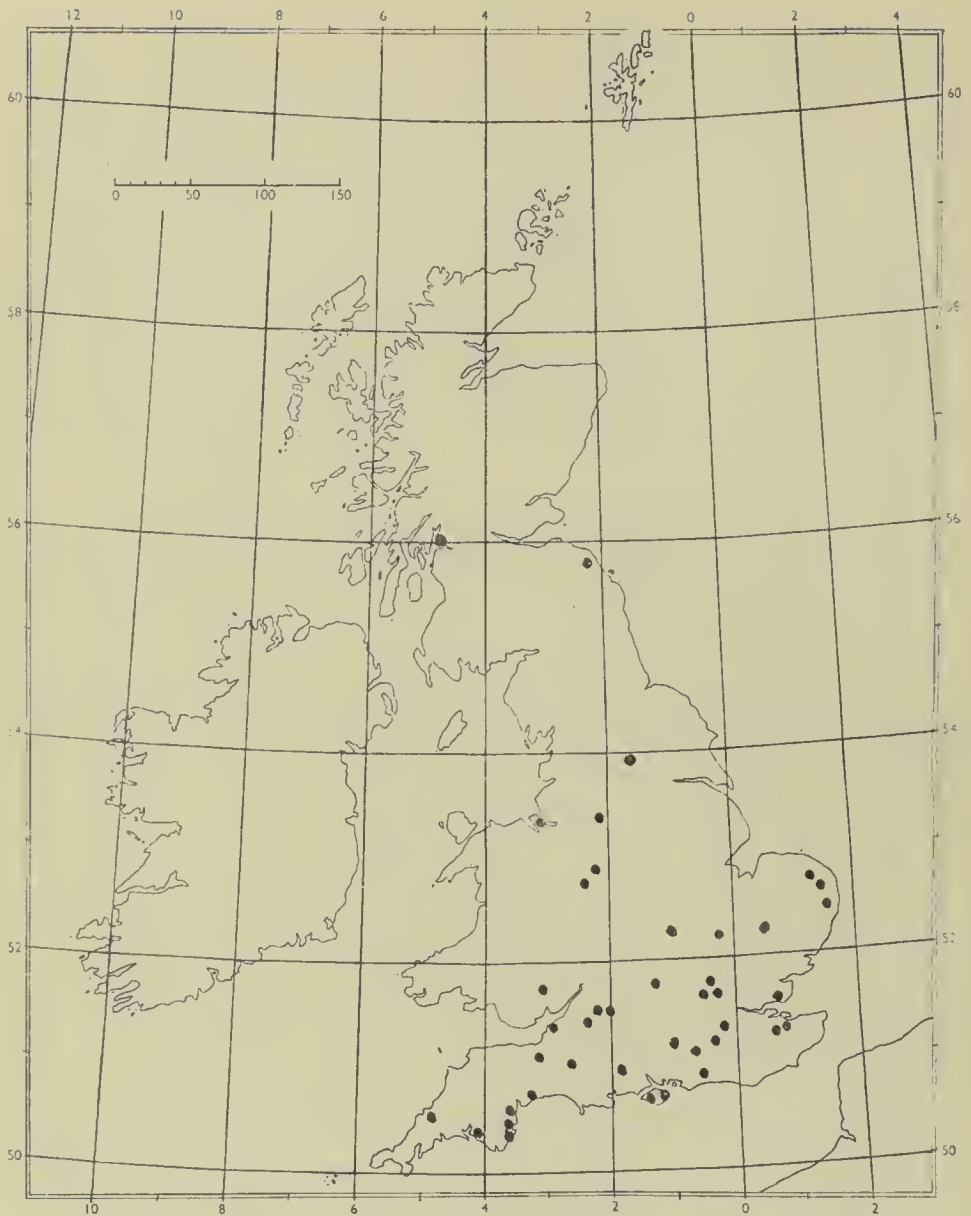


FIG. 8. Attacks on putty by tits (*Parus* spp.) during the winter of 1957-58

claimed that the birds were sucking the moisture. Mortar, paint, whitewash, bell-pushes and window glass were pecked, but the favourite outdoor item was putty.* 43 cases were reported, mainly in southern England (see Fig. 8). Table I shows that, as with attacks on milk-bottles and paper, November was the peak month. These attacks were serious enough on some housing estates to cause a question to be asked at a meeting of the London County Council. In most cases where the information was given the attacks were made

*Also not a new habit, for as long ago as 1887 the Rev. C. A. Smith stated that Great Tits in Sweden picked putty from the windows in autumn.



PLATE 9. Black-necked Grebe (*Podiceps nigricollis*) at characteristic nest of piled water-weeds, Denmark, June 1957 (pages 77-81). Note the tip-tilted bill and high forehead, the golden fan of long and narrow silky feathers behind the pink eye, the otherwise black head and neck, and the lobed feet (C. C. Doncaster)

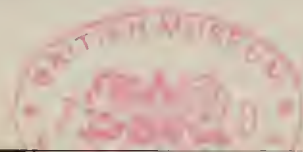




PLATE 10. Male Black-necked Grebe (*Podiceps nigricollis*) leaving nest as female swims behind (both sit on the 3-5 eggs); the awkward stance is typical of these essentially aquatic birds (C. C. Doncaster). Below, male on larger nest in site more overgrown with reeds, Hertfordshire, 1919 (page 78) (Oliver G. Pike)





PLATE II. Above, head-on view of Black-necked Grebe (*Podiceps nigricollis*) on nest, Denmark, June 1957; the high crown and the "jowls" of the throat-tippets are striking. Below, extreme example of threat posture used at gulls near-by, bill parted and neck extended in direction of intruder (page 79) (M. D. Fingland)





PLATE 12. Part of a large flock of Dotterel (*Charadrius morinellus*), Norfolk, August 1959 (page 84). Though not easy to see in off-season and juvenile plumage despite their broad white eye-stripes, nineteen appear above, while the enlargement beneath shows five and, centre top, the blurred head of a sixth (J. V. Beer)



on fresh putty—19 compared with only two on old putty. The chief offenders were Blue Tits (24), with Great (11), Coal (3), Marsh (1) and unidentified tits (7).

RECOVERIES OF RINGED TITS

The observational evidence shows that large numbers of tits were present in many coastal and inland areas in the autumn of 1957; it also suggests that there were large-scale movements of Continental birds from the east and south coasts in northerly and westerly directions, that these were joined by many native birds, and that return passage occurred in the spring of 1958 on a smaller scale. The recoveries of ringed tits provide firm evidence of the nature of some of the movements.

Recoveries over any distance of British-ringed tits are normally extremely rare. Table II shows that up to the end of 1956 barely one in fifty of the Great Tit recoveries were more than thirty miles from the place of ringing, with an even smaller proportion in the case of the Blue Tit. It might therefore have seemed that further ringing of these species to show movements was of little use, but fortunately record numbers were trapped and marked during and after the invasion, and recoveries of great value followed. In 1957 and 1958, recoveries over ten miles were for both species more than twice the previous percentage, and those over thirty miles were for Blue Tits nearly four times the previous percentage and for Great Tits over two and a half times.

TABLE II—RECOVERIES OF BRITISH-RINGED BLUE AND GREAT TITS (*Parus caeruleus* and *major*) TO SHOW DISTANCES TRAVELLED

		Total recovered	Over 10 miles	Over 30 miles
Up to 1956	Blue Tit	1,121	59 (5.3%)	18 (1.6%)
	Great Tit	533	25 (4.7%)	11 (2.1%)
1957-1958 (mid-Dec.)	Blue Tit	470	54 (11.5%)	29 (6.2%)
	Great Tit	157	17 (10.8%)	9 (5.7%)

The recoveries of all Great and Blue Tits found more than thirty miles from the place of ringing are marked on two maps (Figs. 9 and 10). Fig. 9 shows the places of ringing and recovery of all birds ringed between May and November 1957 and recovered up to 31st March 1958, i.e. those recovered during the movement and in the winter months before the main return began.* Birds ringed between 1st

*As the return movements were spread over several months, any division is somewhat arbitrary, and one recovery on 31st March has been included on this map where it appears more appropriate.

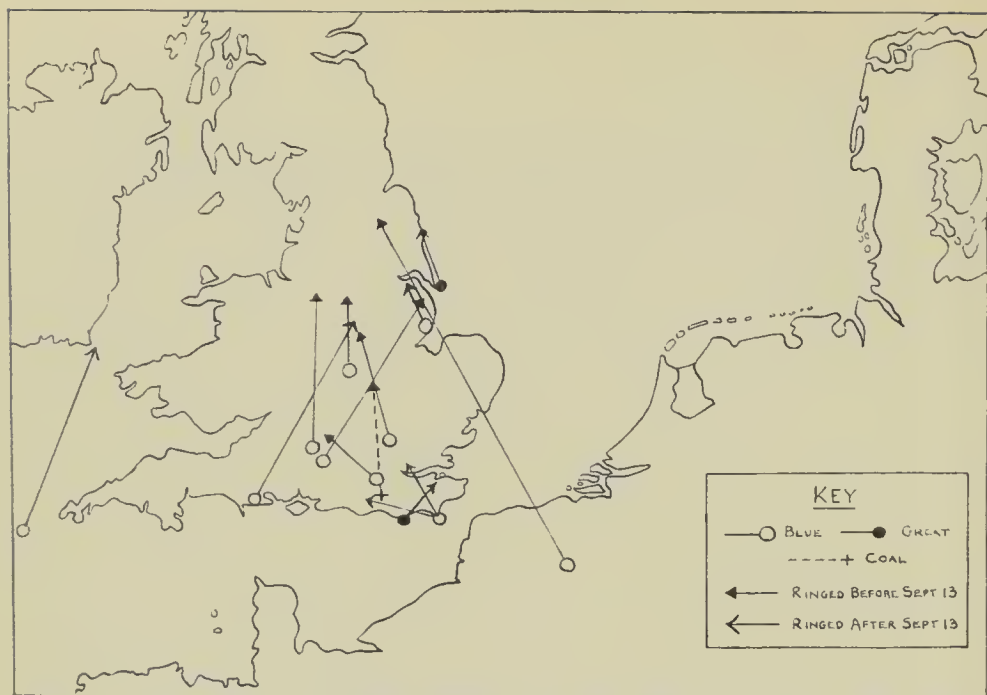


FIG. 9. Recoveries concerning Britain of Blue, Great and Coal Tits (*Parus caeruleus*, *major* and *ater*) more than 30 miles from the place of ringing: (a) ringed between May and November 1957 and recovered by 5th March 1958. These recoveries before the main return in spring show movements between west and north-north-east

May and 13th September, which can be assumed to be British, are separately marked and these recoveries show that a number of Blue Tits in southern and central England moved in directions between N.W. and N.N.E. for distances of up to 135 miles (including two over 100 miles and three between 30 and 100 miles; also four between 10 and 30 miles). None, however, penetrated very far into northern England. All these were ringed as nestlings or juveniles, and no adults showed any movement over ten miles. With one exception—a nestling which had moved 15 miles N.W. by early September—all were recovered from October onwards, suggesting that British birds did not move to any great extent until after the irruption from abroad. No Great Tits ringed here during the period from May to 1st September were recovered more than twenty miles away. Two ringed as nestlings moved over ten miles (W. and S.), but again no adults showed any movement. This map also illustrates the recoveries (up to 5th March 1958) of birds ringed after 14th September, when the coastal influx began, and before December, when it had ended. Again the movements were all in northerly and westerly directions (W. to N.N.E.), but again no great penetration into the west or north of Britain is revealed. The most westerly record was that of a Blue Tit

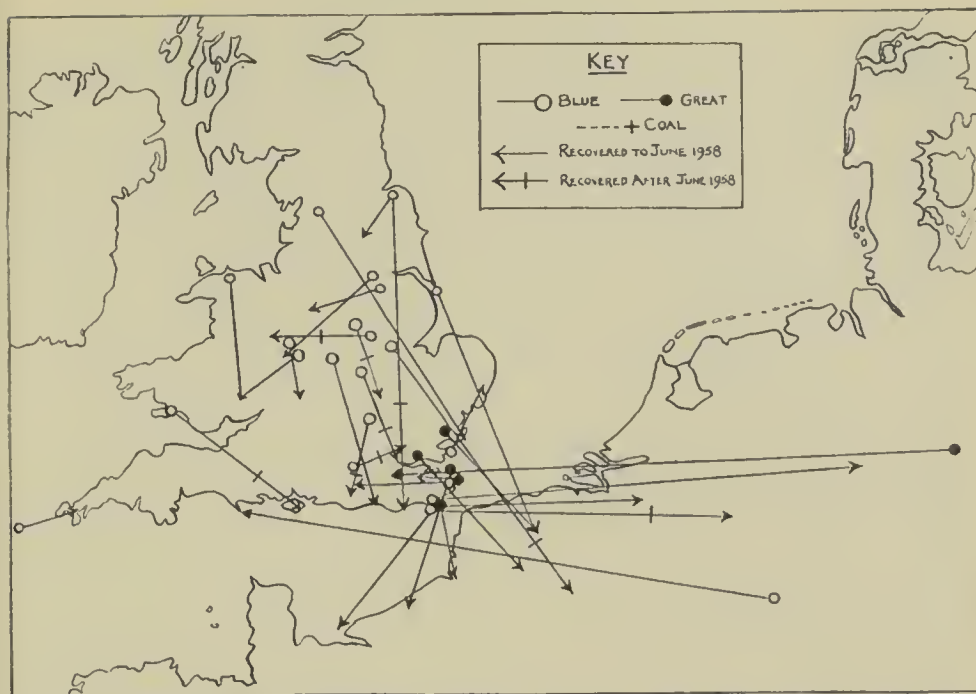


FIG. 10. Recoveries concerning Britain of Blue, Great and Coal Tits (*Parus caeruleus*, *major* and *ater*) more than 30 miles from the place of ringing: (b) ringed between May 1957 and April 1958 and recovered after 5th March 1958. These recoveries during and after the main spring movements generally show reverse directions from those of autumn and winter

ringed at St. Agnes (Isles of Scilly) on 8th October and recovered four days later on a lightship off Co. Wexford, 160 miles to the north, and the most northerly a juvenile ringed in East Flanders in July and found dead at Thirsk (Yorkshire) in early February. There are only two Great Tit recoveries over thirty miles (both of 35 miles), compared with six Blue Tits, all actually of fifty miles or more.

The second map (Fig. 10) shows movements over thirty miles of birds ringed between May 1957 and April 1958 (but mainly in the autumn and winter) and recovered after 5th March 1958. These fall into two divisions. The first group consists of those recovered between 5th March and the end of the 1958 breeding season. These show that a number of Blue and Great Tits returned to the Continent after being caught here between autumn and early spring, and that others were recovered on the coasts or inland apparently during the return movement. The great majority of these birds (11 out of 13 Blue Tits and five out of six Great) had moved between E.N.E. and S.W., i.e. generally the reverse of the autumn movements. The recoveries include Blue Tits ringed in northern and central England, Wales and the Isles of Scilly, but all the Great Tits had been marked in south-eastern England. The recoveries abroad were mainly in those

parts of N. France adjoining this country, but a Blue Tit ringed at New Romney (Kent) in December (and re-trapped locally on 30th March) was found some 340 miles away near Blomberg, Germany, in early May. In addition, two juveniles ringed in Germany in the summer of 1957 were recovered here: a Blue Tit marked at Coblenz in June was trapped at Portland (Dorset) as late as 28th April 1958, and a Great Tit ringed in Brunswick in May 1957 was caught at Sevenoaks (Kent) on 15th March 1958. Thus, the recoveries support the conclusion derived earlier from the analysis of the weather conditions that most of the birds involved probably came from the nearer parts of the Continent—N. France, the Low Countries and N.W. Germany.

The second group of recoveries shown in Fig. 10 consists of those made after the 1958 breeding season. Their significance is less clear as the birds may have moved again in the autumn of 1958 (although this is unlikely in view of the sedentary behaviour of both species in normal years and the fact that when movements do take place they largely involve birds of the year). The pattern is similar to those found earlier. There were nine Blue Tit recoveries over thirty miles, and eight were at points between E.N.E. and S. of the place of ringing, including one in N. France in January 1959 and another in Germany (Dusseldorf) in April 1959. No Great Tits in this period were recovered more than ten miles from the place of ringing.

Two Blue Tits trapped at Portland (Dorset) in October 1957 were recovered there in October 1958, and two ringed at Spurn (Yorkshire) in October 1957 and January 1958 were recovered there in the late autumn of 1958. Also, three Blue Tits ringed on the south coast (one in Kent in October 1957 and two in Sussex in spring 1958) were recovered in this country up to thirty miles away after the 1958 breeding season. These suggest that not all birds on the coast during the periods of movement were of Continental origin, or perhaps that some Continental birds remained in this country. The latter seems likely in the case of a male ringed at Eastbourne in April 1958 and recovered at Dungeness in September, for this bird had a wing-length of 71 mm.; however, even this one could have returned here after nesting abroad.

Recoveries of Blue and Great Tits over any distance in earlier years, although much fewer in proportion, are in agreement with the main pattern described above. In particular, among Blue Tits ringed between May and August, when accurate determination of age is most likely, it is only nestlings and juveniles which show movement over ten miles, again mostly in northerly or westerly directions (seven out of ten being between W.S.W. and N.E.). The two apparent exceptions are birds described as adult, ringed in August and recovered 14 miles N.E. and 71 miles S.W. in the following October and November respectively. Again movements by Great Tits are less frequent, with

only one recovery over ten miles—a young bird which moved 18 miles S.W. There are three cases (two Great Tits and one Blue) of birds ringed here between autumn and spring and later recovered abroad; these were all found in N. France, but a Great Tit ringed as a nestling in Saxony in May 1937 was recovered at Bristol in February 1938, a distance of more than 700 miles. This appears to be a record for either Blue or Great Tits from western Europe, but Dr. A. Keve (*in litt.*) states that a Great Tit ringed near Moscow was recovered in the winter of 1954-55 in W. Hungary, over 1,100 miles away.

Ringed recoveries for other tits are much fewer and ones over any distance are even rarer. Only two Coal Tits and one Long-tailed Tit have been found more than ten miles from the place of ringing, and no Marsh or Willow Tits (*Parus atricapillus*). They throw little light, unfortunately, on the birds concerned in the irruption, as the only distant recovery of a Coal Tit ringed in 1957-58 concerns one marked at Haywards Heath (Sussex) in late August 1957 and found 93 miles away N.N.W. in November; this may have been a bird of the year, and the Long-tailed Tit was also presumably of British stock, being ringed at Winchester in July 1957 and recovered 16 miles away S.S.E. in January 1958.

(*To be concluded*)

Studies of less familiar birds

103. Black-necked Grebe

Photographs by C. C. Doncaster, M.D. England and Oliver G. Pike

(Plates 9-11)

A SINGLE PHOTOGRAPH of the Black-necked Grebe (*Podiceps nigricollis*) has appeared previously in this series (*Brit. Birds*, 50: plate 8), but we feel more than justified in repeating this species in view of the excellent and interesting pictures taken by C. C. Doncaster and M. D. England in Denmark (Jutland) in June 1957. A selection of these is reproduced here as plates 9, 10a and 11. We thought that this would also be a good opportunity to publish one of the photographs obtained by Oliver G. Pike at Marsworth Reservoir, Tring, on the borders of Hertfordshire and Buckinghamshire, as far back as 1919 (plate 10b). A full account by Mr. Pike of his observations at this nest was published in *British Birds* at the time (13: 146-154); this was illustrated with a number of the photographs he took, though not this one which is probably one of the best. Great Britain and Ireland are very much on the fringe of the Black-necked Grebe's breeding range which

otherwise extends from the Low Countries and southern France eastwards into western Asia, with separate outcrops in southern Spain and the north-west tip of Africa, and "apparently" in Manchuria and northern China (see G. P. Dementiev and N. A. Gladkov, *The Birds of the Soviet Union*, vol. 2). In addition, allied races breed locally in East and South Africa and in North America from British Columbia to California and Texas. Except in Africa, where it is the only one of the five Palearctic grebes to be found, it is thus largely confined between latitudes 35° and 60° and it is only a partial migrant which tends to winter a little south of its breeding range.

In Great Britain and Ireland the species has long been no more than a rare and for the most part irregular nester, and in recent years it has declined more and more. In England it has been found breeding in some eight counties—the most recent new one published being Co. Durham in 1946 (*Brit. Birds*, 40: 21-23)—but in only Cheshire and Hertfordshire has there been any series of records this century. Breeding has also been proved with some regularity in Scotland (especially Midlothian and Fife) and Wales (Anglesey). From 1929 until quite recently, however, the real stronghold of this species has been in Ireland. In 1930 C. V. Stoney and G. R. Humphreys estimated no less than 250 pairs of this social-nesting bird in Co. Roscommon (*Brit. Birds*, 24: 170-173). This site later became deserted owing to reduced water level and was then recolonised though not in the same numbers. Until the early 1950's small-scale breeding went on in Cos. Roscommon and Galway (earlier also Westmeath and formerly Mayo), but drainage and interference have now destroyed these sites and Major R. F. Rutledge tells us that he has no evidence of any nesting in Ireland since 1955 (see also P. G. Kennedy *et al.*, *The Birds of Ireland*, 1954, pp. 8-10). Two nests in Yorkshire in 1956 similarly failed through drainage (*Y.N.U. Orn. Report 1956: 45*).

The habitat may be any sheet of water from a large pond to a mere or reservoir. There must normally be a good growth of reed or sedge, but the place where the nest is built may be either overgrown or quite open with sparse and low vegetation, as is shown by a comparison between plates 10a and 10b. These same two photographs also illustrate the variation that there may be in the size of the nest, though this is always the floating mound of decaying aquatic vegetation that is typical of the grebe family. Plate 9 is an exceptionally fine study of a Black-necked Grebe on its nest and the caption there draws attention to some of the more significant features, including those which distinguish it in summer from the rather similar but flatter-crowned and chestnut-necked Slavonian Grebe (*P. auritus*) which also has a stripe (rather than a fan) of gold through the eye.

There often seems to be, in Europe at least, an association between

Black-necked Grebes and Black-headed Gulls (*Larus ridibundus*), and an illustration of this was published in *British Birds* in March 1958 (51: plate 17). The nest shown in these Danish photographs was a case in point and Mr. England has supplied the notes which follow in the next three paragraphs.

"The lake was about four acres in extent and three Black-necked Grebe's nests about thirty feet apart and the same distance from the shore were found within a small colony of Black-headed Gulls. The one photographed had two gull's nests within five feet of it. The water at this point was about fifteen inches deep and the structure, which was in a very open site, was floating with little apparent support. When found on 17th June, one of the grebe's nests had four well-set eggs, another clutch had hatched and the third had come to grief (one cold egg in the nest and one whole and one broken one in the water beside). The gulls were all incubating eggs or in attendance on incomplete clutches: it is likely that their first layings had been destroyed by order of the landowners, who apparently consider these birds harmful to agriculture, and this is certainly what happened about a week later when, in ignorance, even the remaining grebe's nest was demolished. Otherwise, the proximity of the gulls was an advantage to the grebes in that the former acted as 'watch dogs'. The lake was surrounded by a bank which was sufficiently high to render any approaching person (or other enemy) invisible from water level until very close. Since one or more gulls were continuously in the air they were able to give warning when the possible danger was a considerable distance away, and it was very noticeable how the grebes reacted to this. The incubating bird would become alert and sit very upright at the first signal, and if the alarm became more urgent would start carefully and deliberately to cover the eggs. Only when it could actually see the danger would it leave the nest, however.

"On the other hand, although the grebes were never seen to be molested in any way by the gulls, they were most distrustful of them and would cower down on the nest if one swooped uncomfortably close in flight. A gull swimming at less than about six feet evoked a threat display from the sitting grebe, and the same posture was also occasionally adopted towards the gull arriving or standing at the nearest nest. In this display the bird extended its neck in the direction of the gull, usually with its bill slightly open, and since it did this without moving its body it frequently happened that it was stretching over its own back (see plate 11b). If the gull swam in a circle around the grebe it resulted in an amazing exhibition of flexibility from the latter's neck. A gull approaching to within a yard caused the grebe to rise to its feet while displaying, and when this happened it turned its body at least partially to face the intruder.

"Both adult grebes took approximately equal turns on the nest and during the day rarely sat unrelieved for more than two hours, though one spell of nearly four hours was noted. The presumed male would visit his mate at intervals while she incubated, but during her periods off duty the presumed female went right away to the other side of the lake. When approaching the nest both brought additional vegetation and in fact made several brief special journeys to do so. The male's efforts in this direction, although just as enthusiastic as his mate's, were not very successful, since in his anxiety to return for more he frequently dropped the weed before managing to add it to the nest. Sometimes, though not always, the sitting bird greeted the approach of the other by stretching its neck low over the water, raising its crest and uttering a soft and deep grunting 'poop'. Either when arriving to incubate sat quietly on the water before suddenly springing on to the side of the nest."

The breeding season is normally regarded as beginning in the second half of May at this latitude and a month or more earlier in southern Spain, in which connection it is interesting to note that in 1945 a nest in Cheshire contained at least two eggs on 17th April (*Brit. Birds*, 39: 62). The courtship, hostile behaviour, nest-establishment and egg-laying of this species has been studied in some detail in Canada by Nancy M. McAllister (*Auk*, 75: 290-311 and plates 13-14). Her paper divides the courtship patterns into five—an advertising display (very upright with crest raised), habit-preening, head-shaking, the standing penguin dance, and the peculiar cat attitude, both sexes having the same displays. Her account has much to add to what is in *The Handbook*, but there may be differences between the American and Palaearctic races. P. J. Askey and A. W. Boyd (*Brit. Birds*, 38: 136-137) refer to habit-preening and head-shaking as the two predominant display actions by a Cheshire pair and also cite single observations of billing, of an attempt at weed-presentation and of one bird stretching out its neck low over the water and at the same time raising the wing on the side nearest to its mate. In low intensity hostile behaviour used in territorial squabbles McAllister describes the neck as being held forward at an angle of about 45° with the bill open. She found that in a region of lakes which varied from a few acres to about twenty square miles in extent the Black-necked Grebes chose ones about a mile by half a mile. When nest-building begins courtship ceases and the original structure is apparently built largely, if not entirely, by the female. McAllister goes on to describe the nest as a floating heap of debris, on a foundation of reeds, with the slightly rimmed cup rising only an inch or two about the surface of water $1-3\frac{1}{2}$ feet deep. One of several nests in South Africa, at Port Elizabeth, was described by R. Liversedge and G. R. McLachlan (*Ostrich*, 28: 233-234) as a

"mound of scum about six to eight inches in diameter, the hollow of the nest was at water level, while the rim was less than an inch above it".

F. C. R. Jourdain in *The Handbook* says of the food of this species, "Fish only taken to a small extent," and he states the main diet to be insects, with Mollusca, small frogs and tadpoles recorded. He adds, however, that young in Hertfordshire were fed on small fish and it is interesting to note that G. W. Temperley (*Brit. Birds*, 40: 21-22) writes that a pair in Co. Durham "appeared to be feeding themselves and their young solely upon fish about the size of a small minnow or stickleback. The juveniles, when old enough to dive for themselves, invariably emerged with fish in their bills." In this connection, R. Poncy (*Nos Oiseaux*, 22: 72) describes the finding in Switzerland in December 1942 of a Black-necked Grebe which had been choked by a Miller's Thumb (*Cottus gobio*) 8.5 cm. long.

I. J. F.-L.

Additional gamebook records of Partridges in Wales

By Colin Matheson

National Museum of Wales

THROUGH THE CO-OPERATION of Mr. C. H. W. Griffith and Major H. E. David, the writer has recently received for examination the gamebooks relating to the Stackpole Court estate, the property of the Earl of Cawdor, in the south-western coastal area of Pembrokeshire, south of Pembroke itself and comprising an area of roughly 15,000 acres. These books constitute the most complete set of game records yet examined, covering with few omissions the years 1823 to 1938, a period of 116 years. The Partridge (*Perdix perdix*) records are listed in Table I where, as previously, "1823" refers to the 1823-24 season, and so on.

Owen (1603), describing the bird life of Pembrokeshire in the time of Queen Elizabeth I, devotes much space to the Woodcock (*Scolopax rusticola*) and to sea-gulls and to the large numbers taken for food; but simply mentions the Partridge, along with "Quail, Rail, Lapwing and Lark, and many other sort of small birds" as among the birds "that breedeth in the field". And Mathew (1894) wrote, "We invariably found the labourers, and farm people in general, when we were out shooting, eager to give us information respecting any 'cyfflog', or Woodcock, they had seen; it was evidently, in their

opinion, *the sportsman's bird*, and in comparison they attached but small importance to the 'petrised', the Partridges..." He notes however that "Although not to be numbered as ranking among the Partridge counties... Pembrokeshire, nevertheless, seems to be well adapted to this well-known and favourite bird, and in the southern districts, notably on Lord Cawdor's estates in the parishes of Castle Martin, etc., it is fairly plentiful, and very good bags are made."

TABLE I.—TOTAL BAGS OF PARTRIDGES (*Perdix perdix*) AT STACKPOLE COURT, PEMBROKESHIRE, 1823-1938

Season	Partridges	Season	Partridges	Season	Partridges
1823	35	1862	261	1901	331
4	166	3	200	2	63
5	66	4	149	3	62
6	220	5	182	4	79
7	274	6	167	5	113
8	129	7	282	6	274
9	103	8	501	7	94
1830	—	9	650	8	208
1	1	1870	417	9	114
2	125	1	706	1910	175
3	41	2	490	1	347
4	186	3	469	2	132
5	68	4	548	3	168
6	94	5	185	4	135
7	—	6	241	5	201
8	12	7	105	6	104
9	—	8	38	7	92
1840	2	9	50	8	47
1	3	1880	26	9	53
2	7	1	252	1920	67
3	28	2	463	1	58
4	5	3	376	2	52
5	107	4	569	3	67
6	6	5	723	4	47
7	185	6	665	5	30
8	87	7	1,216	6	52
9	159	8	969	7	39
1850	73	9	1,273	8	86
1	237	1890	1,092	9	69
2	166	1	870	1930	57
3	196	2	600	1	35
4	16	3	650	2	50
5	86	4	502	3	57
6	65	5	823	4	170
7	259	6	865	5	68
8	321	7	972	6	15
9	166	8	976	7	14
1860	87	9	543	8	10
1	—	1900	299		

The complete records for Voelas (Denbighshire), Powis (Montgomeryshire), and Gogerddan (Cardiganshire), and a summary of the records for a number of other estates, have been published previously (Matheson 1953, 1956ab, 1957). Attention may be drawn briefly to the more notable similarities between these and the Stackpole Court records.

The earliest records available are those for Stackpole Court and Gogerddan. It may be noted that at Stackpole the 1851 bag was the highest in a period of 29 years (1828-56); while at Gogerddan in 1850 the bag was the highest in at least 24 years (from 1832, when full records begin, to 1855).

Another notable period was 1857-59, which included at Stackpole the best bag in 45 years (1823-67); at Gogerddan, the best in 35 years (1832-66); at Voelas, the best in at least 14 years (from the beginning of the records in 1854 up to 1867); at Penllergaer in Glamorgan, the best in at least 29 years (from the beginning of the records in 1858 up to 1886); and at Dunraven in Glamorgan, the best in the 9 years for which records are available (1856-64).

Another peak on several estates was around 1869-71, which included bags at Stackpole, Voelas, Powis and Penllergaer that were the biggest in periods ranging from 21 to 62 years. (The Gogerddan records finished in 1868.)

The most marked and generally distributed peak was, as previously noted, in 1887. Long series of records including 1887 are now available for 14 Welsh estates, and on 11 of them this was an outstanding season, the Partridge bag being in 9 cases the highest or the second highest throughout for each estate. The estates concerned were distributed through Glamorgan, Brecknockshire, Monmouthshire, Cardiganshire, Pembrokeshire, Merionethshire, Montgomeryshire, Denbighshire and Anglesey. Only on 3 of the 14 estates was the 1887 bag average or poor.

The period 1896-98 included (in addition to peak years previously noted on eight estates in Monmouthshire, Brecknockshire, Denbighshire, Montgomeryshire, Merionethshire and Anglesey) peaks at Stackpole (highest from 1891 to the end of the records) and at Tythegston, Glamorgan (highest in the recorded period 1879-1935); that is, on 10 of the 12 estates with records available.

Similar features may be noted in the records for some estates during the present century, but there was a marked decline in the bags on many of them, especially during and after the two world wars. It will be seen that at Stackpole the 1934 bag was the highest since 1915; and the same is true of Voelas, where the 1935 bag was still higher. For Llanarmon in Denbighshire the 1934 and 1935 figures are the highest in the recorded period (1920-49); at Dunraven in Glamorgan

1934 also had the highest bag in the recorded period (1927-56).

My thanks are due to Lord Cawdor for permission to publish the Stackpole Court records.

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Notes

Unusual site of Hen Harrier's nest.—On 4th June 1959, in the north of Scotland, three companions and I saw a female Hen Harrier (*Circus cyaneus*) circling over some high coastal dunes. She appeared to be carrying a small object in her talons. Diving and swerving about, she eventually dropped down among the marram grass, only to rise again about 30 seconds later carrying a twig of heather or some such plant in her bill. Then, coming back along the side of a particularly high dune well covered with marram, she turned sharply and dropped out of sight. After waiting for five minutes or so, we began to suspect that she might after all be breeding in this surprising place. We walked over and when we were about three yards from the spot she struck the air with a great flurry of wings, disclosing a nest with four eggs and a fifth she had kicked out in her hurry.

The nest was about half way up the slope of this fixed dune and was well built of dry marram grass and stalks of heather. There was a prolific growth of plants, chiefly meadow-sweet, immediately around it in this vast area of otherwise arid sand and marram, suggesting that it was a regular eyrie. A quarter of an hour after we returned to the car the bird came back and dropped down to the spot without hesitation.

JOHN CUSS

Large flock of Dotterel in Norfolk and Lincolnshire.—At 11.30 a.m. on 20th August 1959 a flock of 47 Dotterel (*Charadrius morinellus*) was found resting in a ploughed field on reclaimed land just behind the

sea wall at Terrington Marsh, Norfolk. The birds had almost certainly just arrived and appeared very tired, allowing approach to within six feet. In this position they were watched by J. F. W. Bruhn, M. P. F. Elliott, W. A. Cook, P. R. Evans, G. V. T. Matthews, Patricia R. Minton, D. J. Pearson, B. R. Slattery and myself, and photographed by J. V. Beer (plate 12). Most of the birds were adults still partly in summer plumage. At about 3 p.m. we flushed the flock which then departed to the south-west and was seen to cross the county boundary into Lincolnshire.

This appears to be by far the largest flock of Dotterel recorded in England this century, and there are only three records of greater numbers elsewhere in the British Isles. S. Baigrie (*Scot. Nat.*, 34: 239) recorded sizeable flocks of these birds at the light on the Isle of May, Firth of Forth, on the nights of 29th and 30th August 1914, there being "hundreds" on the latter night. The other two records are both from Ireland. A flock of more than a hundred *thought* to be the same as one shot which proved to be a Dotterel was recorded by A. R. Nichols in Donegal Bay on 29th November 1905 (*Irish Nat.*, xv: 45). The last record is more recent: separate trips of about 20 and 30 birds were seen on 26th March 1948 by J. R. Smythies a few hundred yards apart on a mountain near Tralee, Co. Kerry (*Brit. Birds*, 42: 25). Incidentally, the same observer saw a party of about 25 on the same mountains 12 days earlier, and in mid-April 1940 another good-sized flock of 20-30 was observed by K. Kennedy near Tullamore, Co. Offaly (*Handbook*, Supp. Add. and Corr., p. 21).

C. D. T. MINTON

Wood Sandpiper breeding in Sutherland.—In *British Birds* for December 1959 (52: 432), in connection with the nesting of Green Sandpipers (*Tringa ochropus*) in Inverness-shire, a brief reference was made to the breeding of a pair of Wood Sandpipers (*T. glareola*) in Sutherland. Unfortunately, some confusion was caused in the latter case by the use of the wrong scientific name and an error in the date. We are grateful to Miss Margaret R. Sanderson and others for drawing our attention to these mistakes. The young Wood Sandpipers were, in fact, seen from 23rd July to 5th August. Full details have appeared in *Scottish Birds* (1: 150-151).

Length of time between "starring" and hatching of Redshank eggs.—At the end of May 1958 I was keeping a regular watch on the nest of a Redshank (*Tringa totanus*) at Minsmere, Suffolk, because I wanted to photograph the chicks when they hatched. At 18.00 hours (G.M.T.) on 28th May three of the four eggs were "starred" and so I was surprised when three days later, at noon on the 31st, all the eggs

were still unhatched. One had a minute piece of shell broken away, but the other three were as yet only starred, though the chicks could be heard tapping in all of them. Twenty-four hours later the four young were out and dry. Thus it appears that for at least three full days after first cracking the shells the chicks were unable to break out.

C. K. MYLNE

[In *Intimate Sketches from Bird Life* (1940) C. W. Newberry and I gave some examples of the hatching time of wader eggs from their first starring and we called this period the "chipping time" (p. 78). In that book we mentioned cases of a Common Sandpiper (*Tringa hypoleucos*) which took 72 hours and a Stone Curlew (*Burhinus oedipnemus*) which took a minimum of 61 hours. I also have a note of a Red-shank's nest at which the chipping time was at least 70 hours, and instances of a Ringed Plover (*Charadrius hiaticula*) taking 64 hours and a Lapwing (*Vanellus vanellus*) 62 hours. However, my record concerns another Stone Curlew's nest at which the chipping time was 92 hours: this was during a period of exceptionally dry weather and one of the two young survived only two hours after hatching. I should perhaps add that no photography was being done at this nest and that we visited it only once each day until just before the young emerged. —E.H.]

Techniques of Herring Gulls and Jackdaws preying on Puffins.—

While making a film of sea-birds in Pembrokeshire in the summer of 1959, I spent many hours on the island of Skomer watching the Puffins (*Fratercula arctica*). I became especially interested in their behaviour in relation to that of their two chief enemies at the time of feeding their young (mid-June to August), namely the Herring Gulls (*Larus argentatus*) and the Jackdaws (*Corvus monedula*). Both these species would wait on the cliff-tops above the colonies, individual birds seeming to occupy regular "beats". From such vantage points they would pounce on any returning Puffin in order to rob it of its beakful of fish as it ran to its burrow mouth. As a result, the Puffins became extremely wary and nervous, often flying round in a wide circle a dozen times before choosing the moment to land and then disappearing down the burrow with remarkable agility.

The Herring Gulls (on both Skomer and the neighbouring island of Skokholm) used several different techniques to catch the Puffins during the vital seconds between their landing and their disappearance down the burrow. Some attempts to chase birds in flight were observed, but these were very seldom successful, the Puffin nearly always escaping with a rapid dive towards the sea. On a few occasions, however, a Herring Gull was seen to continue the pursuit down to the

water, whereupon the Puffin would drop its food and this would then be immediately picked from the surface by its tormentor. Once a Puffin let go its fish at its burrow mouth when first attacked and yet was still pursued by the marauder for several hundred yards out to sea; but the gull may have been unaware that the food had been dropped. Certainly on no occasion was a Herring Gull seen to attack an adult Puffin itself, and the only one observed to kill a fully fledged young Puffin took half an hour to do so and was then quite unable to eat it on the water. Great Black-backed Gulls (*L. marinus*), by contrast, could disembowel Puffins in a matter of seconds after killing them.

Some Herring Gulls remained on the wing and quartered the colony while watching for the arrival of Puffins carrying food. Such birds were not nearly so successful, however, as those which stood near the burrows (or even some distance away) and pounced only as Puffins came in to land. Presumably this was because the ones which remained on the ground were not so conspicuous and one in particular brought this to a fine art.

This gull had its beat just in front of my photographic hide on a cliff-top in the middle of a large Puffin colony. It paid very little attention to humans, virtually ignoring me as I entered the hide and perching on top even when I was inside. At first it just waited, as the others did, watching the endless procession of Puffins flying past. Whenever one which was carrying food approached, its eyes would intently follow that bird's flight, so much so that one could tell what was happening by watching the gull. The grass where it waited was mostly longish and I noted that it began deliberately to crouch in the cover this afforded whenever a food-carrying Puffin started to fly in. After a few days it evolved a clear-cut and regular technique of "hiding" in the grass, with only its head showing, until the Puffin had actually landed. Once the habit had been formed, this gull would flex its legs and squat down on the approach of a Puffin even when it was standing in the open, though this then had little effect in rendering it inconspicuous.

Study of the several film sequences obtained of this Herring Gull confirm the field observations. If the Puffin landed near-by, the gull would attack at once; if further away, it would often wait in a very tense attitude for a considerable time before the wary (and usually clearly terrified) Puffin would dare to approach and make a dash for its burrow. It was most interesting to watch the battle of wits which thus followed when a Puffin landed just too far away to stimulate an immediate attack from the gull, and it provided the strongest impression of birds "thinking" I have ever witnessed. Both gull and Puffin, perhaps only ten yards apart, would stand watching each other intently, each providing a stimulus to the other but in neither case strongly

enough to produce a reaction. The mental struggle for the Puffin between fleeing and feeding its chick was usually resolved in favour of approaching the burrow, provided that the gull remained still. For the gull it appeared to be a more subtle conflict between attacking at too great a distance and waiting for its victim to move, either reaction (when considered in human terms) seeming to involve an element of calculated risk. During this waiting period, indeed from the moment the Puffin landed, the gull almost invariably stood up: this was as clear a reaction as its crouching when the other first approached. The "hiding" technique was most successful against Puffins which landed near-by, but it is hard to say whether it was more successful than the normal method of waiting out in the open. Certainly, however, it earned this particular Herring Gull many a meal of sand-eels designed for nestlings underground (though on at least one occasion it achieved only a beakful of feathers).

As mentioned at the beginning, the Jackdaws also attacked the food-carrying Puffins. Like the Herring Gulls, they would wait along the cliff edge and pursue them both in flight and as they ran to their burrows, though (again like the gulls) they would sit amongst a crowd of empty-billed Puffins at the cliff-top without molesting them. The Jackdaws were frequently seen to eat the fish dropped, probably mostly whitebait and sand-eels, though fish are not mentioned in *The Handbook* as a food of this species. Later in the season they were also observed carrying fish in their crops to their nests or feeding them direct to fully-fledged young on the spot. Fish, in fact, play a large part in the diet of the Jackdaw on Skomer, probably a result of the huge increase in the population of this species there in recent years: in 1946 about twenty pairs were estimated, but now it would clearly be no exaggeration to say that hundreds of pairs breed all round the island. In this connection, I also recorded Jackdaws eating Herring Gulls' eggs and the refuse round the nest of a pair of Great Black-backed Gulls, and there was a continual procession of them flying to and from the mainland for food.

C. K. MYLNE

Golden Oriole breeding in Lancashire.—In the summer of 1959 I heard a story that a farmer's son in a remote village in the northern part of Lancashire (Furness) had an egg of a Golden Oriole (*Oriolus oriolus*) which he had taken locally the previous year. With Mr. and Mrs. J. B. Bottomley, I therefore called at the farm. The boy, who was aged 15 or 16, was away at school, but his mother showed us the egg which was clearly that of a Golden Oriole: it was longish and rather glossy-white with purplish-black spots round the larger end, and it looked "fresh".

I got in touch with the boy and sent him a questionnaire about the

nest. This he returned with capable and convincing answers, from which the following facts are summarised. The nest, which was found in May 1958, was about $4\frac{1}{2}$ feet above the ground in a larch which had fallen down and sprouted irregular vertical outgrowths; it was actually sited near the end of a small branch "in the position one would expect a Goldcrest (*Regulus regulus*)". It was made of dead grass with small bark chips around the outside and was lined with finer grasses and wool; from outside it "appeared quite flat, but in fact had a deep bowl about the size of a thrush's". There were three eggs when the boy discovered the nest and later five, one of which he took; the other four hatched and, so far as he knew, the young fledged safely. He saw the female on the nest and the male near-by; the female was very shy and soon flew off, but he noted that she was much paler than the male and had some olive around the neck. The male was a "brilliant, almost golden, yellow except for the black wing-tips".

Unfortunately nobody else saw the birds or the nest, but the boy's scoutmaster informed me that he was entirely reliable and I see no reason to doubt this record, even though Lancashire is much further north than any of the counties listed under this species in *The Handbook*.

J. A. G. BARNES

[Mr. Barnes has given us the name of the boy and the exact locality, but this information is not being published.—EDS.]

Blackbird incubating and Song Thrush rearing combined brood.

On 19th April 1958, at Fenwick Dene, Northumberland, I flushed a female Blackbird (*Turdus merula*) from a typical nest in a gorse-patch. To my surprise, one of the three eggs it contained was clearly that of a Song Thrush (*T. philomelos*). On 26th April I revisited the site and the female Blackbird left the nest as I approached. There were now six eggs, four of the Blackbird's and two of the Song Thrush's. The next day the contents of the nest were the same, but I noted what I had perhaps missed before, that there was another Song Thrush egg about two feet away in a fork of the gorse. Possibly the female Song Thrush had been prevented by the incubating Blackbird from depositing it in the nest.

My next visit was on 3rd May. The female Blackbird was again on the nest and I found that two of the young Blackbirds had hatched. During the following week the site was visited on several occasions by W. Hume and W. Ord, and to my surprise they reported that it was a Song Thrush that was in attendance on the nestlings, all of which had hatched by 5th May. On the 10th I went myself and saw the Song Thrush brooding the young. On the following day this bird

was again on the nest and I flushed her in order to photograph and ring the six fledglings; these were by then 6-8 days old. During the next four days my two companions watched regularly and still observed only the Song Thrush brooding and feeding the chicks. My own next visit was on the 17th: the nest had tilted to rather a precarious angle and two of the four young Blackbirds were actually standing on the edge. By the following day all six nestlings had left.

Thus, although this nest was inspected at least fifteen times, the Song Thrush was never seen on the eggs and the female Blackbird apparently disappeared when the young hatched. No male Blackbird was ever observed in the vicinity and there was no sign of a second Song Thrush.

A. BLACKETT

[Presumably the Song Thrush's nest had been destroyed, and perhaps the male bird as well since Mr. Blackett tells us that there was evidence of a Sparrowhawk (*Accipiter nisus*) hunting in that area. Mr. Derek Goodwin has known a female domestic pigeon (*Columba* sp.) play the cuckoo when her nest-box was removed just before she was due to lay; this in spite of violent attacks by the owning pair while she deposited her eggs.—Eds.]

Crossbills failing to open cones.—When we were in a pine-wood north of Caldbeck, Cumberland, on 12th July 1958, our attention was drawn by a succession of falling cones. The trees, mainly Scots pine (*Pinus sylvestris*), were tall with dense crowns and from a group of these, at regular and frequent intervals, cones came tumbling down. The average interval was perhaps about 20 seconds and they continued to fall at this rate for about half an hour. As was suspected, they were being dropped by Crossbills (*Loxia curvirostra*). Four birds, all in immature plumage, were seen detaching cones in the usual manner, and extracting and eating the papery seeds. Each bird rarely spent long on any one cone and, after taking out a few seeds, would drop it and go on to another. In this way these few birds produced a steady patter of falling cones. All four were quite silent and only when they suddenly flew away did they call.

A number of the cones seen to fall were collected and examined. All had been cleanly detached from the twig, but in no case did they show the splitting and opening of the scales so typical of Crossbill activity. Most of the scales were closed and apparently the birds were taking only the seeds which were readily accessible. Several cones were dropped from which not a single seed could have been taken. Some which we kept opened out as they dried and shed their seeds. The impression gained watching the sustained and purposeful activity was that the birds were in fact feeding seriously, and it seems

probable that, being young and recent immigrants with bills likely to be incompletely developed, they were unable to deal with the tough scales. Whatever the reason, it shows that the absence of typically "Crossbilled" cones on the floor of a wood in late summer does not necessarily mean that no Crossbills have been feeding there.

Detailed descriptions of the usual methods of feeding and of detaching cones have been given by—for example—B. D. Moreton (*Brit. Birds*, 30: 27-28), W. H. Dobie (*Brit. Birds*, 30: 43-44) and Bruce Campbell (*Forestry Commission Leaflet* No. 36).

DOROTHY and RALPH STOKOE

[We showed this account to Mr. E. Torp Pederson who has for some time been making a special study of the Crossbill in Denmark. He tells us that he has also observed Crossbills dropping quantities of cones unopened or with only a very few seeds taken out. In the pine plantations of Jutland the Scots pine is very rare, but the mountain or mugo pine (*P. montanus*) is common: this also has tough cone scales. Young Crossbills often have great difficulty in opening these cones and are quite unable to do so before they are about 1½-2 months old. —EDS.]

Reviews

The Field Guide to Bird Songs of Eastern and Central North America, arranged to accompany, page by page, Roger Tory Peterson's *A Field Guide to the Birds*. Recorded by the Laboratory of Ornithology, Cornell University, under the direction of Dr. Peter Paul Kellogg and Dr. Arthur Allen in collaboration with Roger Tory Peterson. Houghton Mifflin, Boston, 1959. \$10.

The art of properly using, and still more of adequately reviewing, comprehensive sound guides is pretty exacting, particularly when the birds are those of another continent. This one, manufactured and packaged by Raleigh Records Incorporated of New York, carries sounds of over 300 species on two double-sided long-playing records which turn at a speed of 33 r.p.m. These are divided into 29 bands and each species is announced by voice together with the page-reference in Roger Tory Peterson's excellent *A Field Guide to the Birds* (26th Impression, April 1959, 3 dollars 95 cents). Comparison will inevitably be made with its British predecessor, *Witherby's Sound Guide to British Birds* (reviewed in *Brit. Birds*, 52: 62-65), which differs in covering 195 species on 13 double-sided records playing at 78 r.p.m.

The American work cannot therefore in most cases provide the variety and fullness of material found in the British compilation, and it is less convenient for picking out particular birds than the latter which carries each one on a separate band. On the other hand, the American records, which come in an ordinary L.P. Record cardboard album, take up less space and are naturally less expensive. In some ways, too, the link with a first-rate identification book is an advantage, although it results in far fewer data about songs being given.

Technically both works are of such high standard that any general comparison is unprofitable. *A Field Guide to Bird Songs*, however, at the cost of more drastic selection and clipping of material, has on the whole eliminated more of those background noises which are sometimes charming but often confusing to the listener. Probably more American than European species run to very high frequencies and it is therefore of even greater importance that these Cornell recordings should be played on a first-rate instrument and usually at about the maximum treble setting.

It is interesting to find how many of the birds given are either common to both sides of the North Atlantic, or of interest to British ornithologists as occasional stragglers, or represented here by closely allied species. Examples of the first group are the Common Loon (Great Northern Diver), Red-throated Loon, Red-necked Grebe, Hared (Black-necked) Grebe, Leach's Petrel, Gannet, (Black-crowned) Night Heron, Whistling (Bewick's) Swan, Canada and White-fronted Geese, Mallard, Gadwall, Pintail, Goldeneye, Oldsquaw (Long-tailed Duck), Rough-legged Hawk (Rough-legged Buzzard), Marsh Hawk (Hen Harrier), Osprey, Pigeon Hawk (Merlin), Willow Ptarmigan (Red/Willow Grouse), (Ring-necked) Pheasant, Florida Gallinule (Moorhen), Black-bellied (Grey) Plover, (Wilson's) Snipe, Hudsonian Curlew (Whimbrel), Red-backed Sandpiper (Dunlin), Northern (Red-necked) Phalarope, Parasitic Jaeger (Arctic Skua), Great Black-backed and Herring Gulls, Gull-billed, Common, Arctic, Least (Little), Caspian and Black Terns, Razor-billed Auk (Razorbill), Common Murre (Guillemot), Black Guillemot, (Atlantic) Puffin, Barn Owl, Long-eared and Short-eared Owls, Horned (Shore) Lark, Bank Swallow (Sand Martin), (Barn) Swallow, Magpie, Raven, Black-capped Chickadee (Willow Tit), (Winter) Wren, Starling, House Sparrow, Pine Grosbeak, Redpoll, and Lapland Longspur (Bunting). Examples of transatlantic stragglers include not only the American Bittern, Killdeer, Upland Plover, Greater and Lesser Yellowlegs, Dowitcher, Black-billed and Yellow-billed Cuckoos and Nighthawk, but also more recent additions like Wilson's Phalarope, American Robin, Olive-backed and Gray-cheeked Thrushes, and such smaller birds as Myrtle Warbler, Yellowthroat and Song Sparrow.

Any idea, therefore, that such a work as this is without direct interest to ornithologists concerned exclusively with British species would be very wide of the mark. Moreover, except from the most insular standpoint, such excellent recordings as those of the nearly or possibly totally extinct Ivory-billed Woodpecker, and the fine series of herons, ducks, "hawks", grouse, rails, gulls, woodpeckers, flycatchers, wrens, thrushes and, above all, American warblers and sparrows, will come as a revelation to the Old World ornithologist. An additional point of interest is that this excellent collection has been recorded by the Laboratory at Cornell where the next International Ornithological Congress is to be held.

These records are thus very well worth having for anyone seriously interested in bird sounds and, despite the somewhat pronounced emphasis on songs rather than calls, may even be helpful for critical identifications in Britain.

E.M.N.

My Year with the Woodpeckers. By Heinz Sielmann. Barrie and Rockliff, London, 1959. 139 pages; 4 colour and 28 black-and-white photographs. 21s.

The first British showing of Heinz Sielmann's now famous woodpecker film, on Peter Scott's *Look* series on B.B.C. television, caused such a sensation that several repeat performances had to be given. The success was richly deserved, not only for Sielmann's superlative camera work but for his extraordinary skill in showing us, for the first time, what happens inside a woodpecker's dark nesting chamber. The film, which has also been widely shown on the Continent, created an insistent demand for a written account of the mass of original observations arising from the project, which was mainly concerned with the behaviour of Great Spotted, Green and Black Woodpeckers. Such an account, in book form, was published in Berlin in 1958, under the title *Das Jahr mit den Spechten*. Now a handsomely illustrated English version is available, translated by Sidney Lightman and with an introduction by James Fisher. *My Year with the Woodpeckers* amply fulfils our best expectations.

Sielmann uses his camera inquisitively, not for portraiture, but for seeking and recording in minute detail the day to day behaviour of his subjects. He has been called one of the world's best-equipped photographers. It is true that if he needs to lay a mile of cable, or to obtain a mobile generator for his floodlights, he is able to draw on the ample resources of the *Institut für Film und Bild* in Munich; but this in no way detracts from the immense personal contribution he himself makes. His observations are recorded and analysed with clarity and with an agreeable lack of emphasis on the obvious difficulties attendant on

pioneering a new technique. One example of the latter will suffice. In order to study the nest of a Black Woodpecker, Sielmann chiselled a two-foot hole through seven inches of live timber, at a height of 22 feet above ground; this was accomplished in five days, without disturbing the parent birds! Thereafter, working in a darkened hide attached to the tree, he was able to photograph everything which occurred in the flood-lit nest chamber, with his face at times only four inches from the sitting birds.

A number of apparently new discoveries were made, not the least intriguing being that young Black Woodpeckers will drum inside the nest chamber with the hard tips of their *tongues*. The newly-hatched nestlings of all three species were found to sit in pyramid formation, with their long necks closely intertwined, in order to keep warm; they would not raise their heads for food unless the parents first touched the abnormally enlarged flanges at the bases of their lower mandibles. Entirely new information has also been obtained on the development of feeding behaviour, on the various functions of drumming, on courtship flight and on nest sanitation. Broods of young of all three species were reared in aviaries, in order to supplement observations made at the nests. Here the skilful use of slow-motion, close-up cinematography enabled Sielmann to analyse in detail such things as the interspecific differences in the use of the tongue when feeding. Infra-red photography, which was tried during one attempt at filming Green Woodpeckers in the nest, had to be abandoned because the heat of the lamps melted the colour-screens and because the film proved insufficiently sensitive to short-range detail.

This is a fascinating book, which deserves wide circulation. The many unique illustrations alone are worth its price; most of these are by the author, but two fine portraits in colour are by Eric Hosking. One's only regret is that in a work of this importance neither a subject index nor a bibliography are included in the English edition. G.M.

Letters

Bewick's Swans at Skokholm in February 1956

Sirs,—May I make one small correction to Dr. I. C. T. Nisbet's interesting paper on the influxes of Bewick's Swans (*Cygnus columbianus bewickii*) in the British Isles (*Brit. Birds*, 52: 393-416)? In his Table II he includes a single Welsh record, of 47 birds at Skokholm on 19th February 1956. These are stated in a footnote to have been "originally reported as Whooper Swans (*C. cygnus*)" and that, in fact, is what they were.

Referring to my field note-book for that period, I see that the swans in question passed very low over the island in a westerly direction, and that they flew by me at a distance of barely fifty yards, in bright sunshine. I noted "large size, long slender neck, yellow on bill extending forward to point" and added that they were calling continuously. Admittedly the bill-pattern could have been seen on only a few individuals in the short time the flock was level with me, but I had the impression that all the birds were of the same size and shape.

PETER DAVIS

European records of Ross's Gull

Sirs,—May I point out an error in *British Birds* for December 1959 (52: 423 and plate 66) concerning the number of Ross's Gulls (*Rhodostethia rosea*) recorded in Europe. The fourth and most recent occurrence in the Faeroe Islands has been overlooked. This was an adult male in perfect plumage, shot on the island of Nolsoy on 24th December 1942 and now in Niels a Botni's collection (*Ibis*, 1945: 32). The recent Dutch example is therefore the thirteenth for Europe, not the twelfth as stated.

KENNETH WILLIAMSON

Proposed history of the birds of the Gower Peninsula

Sirs,—On behalf of the Gower Ornithological Society I am collecting material for a short history of the birds of the area. I should be most grateful for any records, new or old, from the Gower Peninsula itself and also from the adjacent areas of Glamorgan and Carmarthenshire. These should be addressed to me at the University College, Swansea, Glamorgan.

HAROLD DICKINSON

Rare Birds Committee: 1959 records

The 1958 report of the Rare Birds Committee is now being prepared and the 1959 one will follow as quickly as possible after it. Details of over 200 records for 1959 of the species on the list published last August (*Brit. Birds*, 52: 242-243) have already been submitted to the Committee, but it is estimated, as we go to press, that particulars of at least another 150 have yet to be received. We should be very grateful if local editors, observatory wardens and private contributors would send full details of all outstanding records to the Committee's Hon. Secretary (G. A. Pyman, 99 Galleywood Road, Chelmsford, Essex) *as soon as possible*. Sabine's Gull has now been added to the list and 1959 records of this species are therefore also requested.

Recent reports and news

By I. J. Ferguson-Lees and Kenneth Williamson

The items here are largely unchecked reports, and must not be regarded as authenticated records. They are selected, on the present writers' judgement alone, from sources generally found to be reliable. Observers' names are usually omitted for reasons of space and in case a report is subsequently rejected, and none of the items will be mentioned in our annual Index. Readers are asked to submit anything of interest as quickly as possible.

Space has restricted this summary to a brief account of the rarer vagrants in November and December. We hope to deal with other aspects of this period in a future issue. The most remarkable record was the discovery of a male Dusky Thrush (*Turdus eimomus*) at Hartlepool (Co. Durham) on 12th December. This bird settled down and was still there on 23rd January; on 10th January it was caught in a mist-net and ringed. The same county produced another eastern Palearctic thrush, a White's Thrush (*Turdus dauma*), at South Shields on 7th November. Among other interesting Passerines were two separate Short-toed Larks (*Calandrella cinerea*) at Fair Isle on 21st and 23rd November; one was trapped and both were judged to be of the Eastern form *longipennis*. A Rose-coloured Starling (*Sturnus roseus*) was seen in Sussex, not far from Eridge (Kent), on 19th and 20th December. Unusually late Golden Orioles (*Oriolus oriolus*) were reported from Sawbridgeworth (Hertfordshire) and Folkestone (Kent) on 1st and 2nd November respectively; out-of-season individuals of this species are, however, always open to the suspicion of being escapes, for the Indian race (*O. o. kumdo*) is to some extent kept in captivity. The remarkable crop of vagrant Bearded Tits (*Panurus biarmicus*) was mentioned last month (pp. 42-43), but two of the most interesting reports were not detailed: these concerned three at Baginton Marsh near Coventry (Warwickshire) on 2nd November and single ones at Frampton-on-Severn (Gloucestershire) on 1st November and 13th December. It should be added that in January the total of counties outside East Anglia with recent records of Bearded Tits rose still higher to twelve as a result of observations in Shropshire (six birds) and Hampshire (three). A Yellow-browed Warbler (*Phylloscopus inornatus*) was seen at the lighthouse at the Butt of Lewis (Outer Hebrides) from 0th to 12th November.

Among non-Passerines we should particularly mention a Little Egret (*Egretta garzetta*) on the Hayle estuary (Cornwall) from 22nd November until at least late December and another on the Yealm estuary (Devon) from 24th November to at least the 26th; although records of Little Egrets have been more frequent in recent years, the majority have referred to the summer and early autumn. Another unusual winter heron was a Little Bittern (*Ixobrychus minutus*) at West Hythe (Kent) on 4th December. The Crane (*Megalornis grus*) which appeared at Teesmouth (Co. Durham) on 4th August (*Brit. Birds*, 52: 320) remained until 1st November and then two were seen in the same county between Sedgefield and Coxhoe from 28th November to 1st December. Another Crane was noted by the Beaulieu River (Hampshire) from 5th to 28th November and was then found dead on the 29th. A Little Bustard (*Otis tetrax*) was shot near Leiston (Suffolk) on 3rd December "in mistake for a pheasant". A Ferruginous Duck (*Aythya nyroca*) was seen at Slapton Ley (Devon) on 14th November and another was shot at a gravel-pit at Baston Common (Lincolnshire) in early December; more recently, a drake was watched by many observers at Barn Elms Reservoir (Surrey) from 10th to at least 20th January. Apart from those wintering at Hartlepool (Co. Durham) and the Naze (Essex) for the fourth year in succession, Mediterranean Gulls (*Larus melanoccephalus*) were seen at Langstone Harbour (Hampshire) and Brighton (Sussex) on 1st November and 24th December.

Notice to Contributors

British Birds publishes material dealing with original observations on the birds of Britain and western Europe, or, where appropriate, on birds of this area as observed in other parts of their range. Except for records of rarities, papers and notes are normally accepted only on condition that the material is not being offered to any other journal. Photographs (glossy prints showing good contrast) and sketches are welcomed. Proofs of all contributions accepted are sent to authors before publication. After publication 20 separates of papers are sent free to authors; additional copies, for which a charge is made, can be provided if ordered when the proofs are returned.

Contributors are asked to observe the following points, attention to which saves the waste of much editorial time on trivial alterations:

1. Papers should be typewritten with double spacing, and on one side of the sheet only. Shorter contributions, if not typed, must be clearly written and with similar spacing. Failure to help in this way may result in delays to publication.

2. Notes should be worded as concisely as possible, and drawn up in the form in which they will be printed, with signature in block capitals and the writer's address clearly written on the same sheet. If more than one note is submitted, each should be on a separate sheet, with signature and address repeated. In the case of rarity records, any supporting description which is too detailed for publication should be attached separately.

3. Certain conventions of style and layout are essential to preserve the uniformity of any publication. Authors of papers in particular, especially of those containing systematic lists, reference lists, tables, etc., should consult the ones in this issue as a guide to general presentation. English names of species should have capital initials for each word, except after a hyphen (e.g. Willow Warbler. Black-tailed Godwit), but group terms should not (e.g. warblers, godwits). English names are those used in *The Handbook of British Birds*, with the exception of the changes listed in *British Birds* in January 1953 (46: 2-3). The scientific name of each species should be given (in brackets and underlined) immediately after the first mention of the English name. Sub-specific names should not be used except where they are relevant to the discussion. It is sometimes more convenient to list scientific names in an appendix. Dates should take the form "1st January 1955" and no other, except in tables where they may be abbreviated to "1st Jan.", "Jan. 1st", or even "Jan. 1", whichever most suits the layout of the table concerned. It is particularly requested that authors should pay attention to reference lists, which otherwise cause much unnecessary work. These should take the following form:

TUCKER, B. W. (1949): "Species and subspecies: a review for general ornithologists". *Brit. Birds*, 42: 129-134.

WITHERBY, H. F. (1894): *Forest Birds: Their Haunts and Habits*. London. p. 34.

Various other conventions concerning references, including their use in the text, should be noted by consulting examples in this issue.

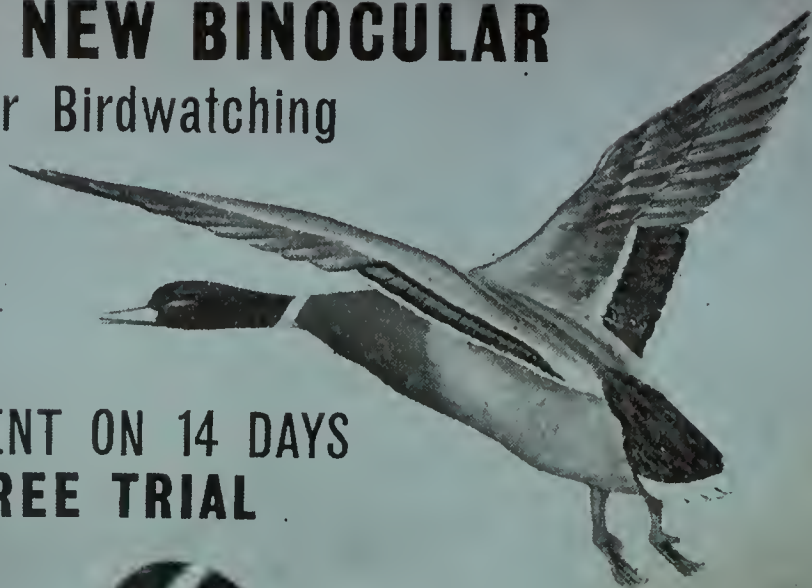
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5. Figures should be numbered with Arabic numerals, and the captions typed on a separate sheet. All line-drawings should be in Indian ink on good quality drawing paper (not of an absorbent nature) or, where necessary, on graph paper, but this must be light blue or very pale grey. It is best if maps, graphs, etc., are drawn twice the size of the final reproduction (ideally, therefore, for the normal 4" width the original should be 8" wide); sketches of birds, however, should be only slightly larger than the size at which it is intended they should appear. It is always most important to consider how each drawing will fit into the page. The neat insertion of lettering, numbers, arrows, etc., is perhaps the most difficult part of Indian ink drawing and, unless he has had considerable experience of this kind of work, an author should seek the aid of a skilled draughtsman.

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British Birds

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Three
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British Birds

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British Birds

VOL. 53 No. 3

MARCH 1960



7 MAR 1960

PURCHASED

Additions to the British and Irish List:

White-throated Sparrow, Black-and-White Warbler and Olive-backed Thrush

THE RECORDS COMMITTEE of the British Ornithologists' Union has reconsidered certain old records of American species over here in the light of present-day realisation that it is technically possible for a small land-bird to cross the Atlantic unaided. This view is influenced by the fact that some Passerines regularly fly between Europe and Greenland, and also by the fact that the question of ship-assisted passage can never be entirely eliminated so that one is faced with the alternatives of excluding all American records or none on this ground alone. Arrival here in an apparently free state must therefore be the main criterion, though records have to be judged individually on their merits and in each case it is necessary to assess the likelihood of escape from captivity, to consider the meteorological factors, and so on. The problems involved have been the subject of full discussions previously and the reader is referred to those (see *Brit. Birds*, 48: 146-147, and *Ibis*, 98: 156-157; also *Brit. Birds*, 53: 40-41).

As a result, the following two species are now added to the British and Irish List:

White-throated Sparrow (*Zonotrichia albicollis*). As recorded by F. Smalley in *Annals of Scottish Natural History* (1909: 206), a male White-throated Sparrow was shot at about noon on 18th May 1909 beside the lighthouse on Eilean Mòr, one of the Flannan Isles, Outer Hebrides. The date is consistent with the time of arrival and passage of this species in the Gulf of St. Lawrence area. Moreover, A. G. Forsdyke of the Meteorological Office has recently kindly examined the old weather records and supplied the following information:

"I conjecture that you may regard it as possible for a bird to cross the Atlantic in a limited area of favourable winds which itself travelled. If this is so, you may be interested in the following sequence of weather:

- 6th May 1909. Low cloud New York/Newfoundland area with south-west to west winds extending from there to 40° - 50° N., 40° W.
 7th May 1909. Strong south-west winds and low cloud 40° - 45° N., 55° - 40° W.
 8th May 1909. West winds 40° - 47° N., 45° - 35° W.
 9th May 1909. West winds 40° - 50° N., 40° - 25° W.
 10th May 1909. South-west winds from 40° - 50° N., 35° W. to 53° - 60° N., 7° W.
 I estimate that if a free balloon had been released from somewhere in the north-eastern United States on 6th May 1909 it might have arrived in western Scotland about four days later. Whether it is beyond the bounds of possibility that a bird might have flown across during that period I am unable to say: it would have had to be in the right position all the time to take advantage of favourable winds. The sequence quoted above is the only one in the first three weeks of May which seems at all possible."

The record of the White-throated Sparrow shot in Aberdeen on 17th August 1867 (see *Proc. Nat. Hist. Soc. Glasgow*, 1869, 1: 209-211, and *Brit. Birds*, 48: 189-190) has not been accepted. While considering this species, it is interesting to recall that two White-throated Sparrows stayed on board S.S. *Statendam* from the time she left New York on 27th September 1957 until within sight of these islands on 4th October 1957 (*Brit. Birds*, 51: 358).

Black-and-White Warbler (*Mniotilta varia*). It is recorded in *The Scottish Naturalist* (1937: 46) that a Black-and-White Warbler was picked up by F. Inkster near Scalloway, Shetland, about the middle of October 1936 following a period of stormy weather. It was forwarded to the Royal Scottish Museum, Edinburgh, and there preserved. It has never been suggested that this common North American migrant was an escape from captivity; it was evidently not accepted at that time because it was believed that small birds could not cross over the Atlantic without resting on ships and that this ruled them out regardless of any other consideration. In this case, however, the natural circumstances of the occurrence are supported by the fact that a Yellow-billed Cuckoo (*Coccyzus americanus*) was recorded in Orkney on 22nd October 1936 (*Brit. Birds*, 31: 125).

We take this opportunity of drawing attention to the fact that the Black-and-White Warbler and White-throated Sparrow are the only two species now added to the British and Irish List following the publication of the paper "American land-birds in western Europe" by W. B. Alexander and R. S. R. Fitter (*Brit. Birds*, 48: 1-14). That paper listed the old records, both good and bad, and drew attention to the need for them to be re-assessed in the light of the considerations by which such records are judged nowadays. Besides the two species mentioned above, several other of the more likely old records of American birds have also been reviewed, but they have not been accepted because it has been impossible to know the full circumstances so long afterwards. It must therefore be stressed that no other

species or records mentioned by Alexander and Fitter should be regarded as added to the British and Irish List, apart from the records already accepted before the publication of their paper. Unfortunately this has not been fully realised, and even the American Ornithologists' Union Check-list of 1957 has thus included several American birds as occurring in Great Britain and Ireland although the records have not been officially accepted over here.

In forthcoming issues we expect to give full publication to certain other species recorded in Great Britain and Ireland for the first time in 1957 and 1958, but there remains one other older occurrence which has been accepted by the B.O.U. Records Committee and which should be mentioned here:

Olive-backed Thrush (*Hylocichla ustulata*). On 26th May 1956 a freshly dead Olive-backed Thrush was found at Blackrock lighthouse, Co. Mayo, by W. P. Roche, assistant keeper there. It is now preserved in the National Museum, Dublin, but it was first of all sent to the American Museum of Natural History where it was assigned to the race *H. u. swainsoni* which breeds from north-central Canada to western Virginia (see *Irish Nat. Journ.*, xii: 172-173, 270).

The irruption of tits in autumn 1957

By S. Cramp, A. Pettet and J. T. R. Sharrock

(Continued from page 77: it was stated last month that this paper would appear in two parts, but its length has made it necessary for the discussion section to be held over until April)

MOVEMENTS OBSERVED ELSEWHERE IN EUROPE

The nature and timing of the main coastal movements in the British Isles, the ringing recoveries and the analyses of the climatic conditions suggest that a large area of N.W. Europe must also have been affected. The information kindly supplied by a number of European correspondents confirms this.

Belgium and Luxembourg

The most marked movements were recorded in those parts of Europe nearest to the British Isles—Belgium, Holland, Germany and Luxembourg. In Belgium there was a notable passage of tits, both along the coasts and in the interior (R. Verheyen *in litt.*). At the ringing

station at Saive-Liège (Ruwet 1958) the annual passage of tits was exceptionally heavy in 1957, with hundreds moving S.W. and Blue Tits outnumbering Great by about five to two. This movement was first noted in early September and between 10th September and 20th October was observed every day from dawn, except during heavy rain. On 21st September it was very heavy and caused great agitation in the local populations of Dunnocks (*Prunella modularis*) and Long-tailed Tits. The Coal Tit is a regular migrant at Saive-Liège from end-August to end-October, but nothing unusual about this species was mentioned in 1957. However, there was an abnormal passage of Coal Tits in Flanders (*Gerfaunt*, 48: 184) and they were particularly numerous during the winter in the woods at Zoute, most of them leaving at the beginning of March (Lippens 1958).

Jays (*Garrulus glandarius*) were seen migrating at several places in Belgium between mid-September and mid-October; a considerable passage was noted at Saive-Liège from early September, with peaks on 27th September and 6th October, and is said to have been general in E. Belgium (Ruwet 1958). There was also an extraordinary movement of Jays in Luxembourg from 3rd September to 7th October, heaviest in the early mornings (Hulten 1958).

On 21st May 1958 a strong return migration of Jays travelling east was seen in Belgium at Knokke-sur-Mer (Lippens 1958). Returning Great Tits were also noted at Jupille-Liège on 26th March (*Gerfaunt*, 48: 184).

Holland

In Holland both Blue and Great Tits were seen in the late summer in areas where they do not breed, and in September and October the passage of these two species and Coal Tits was heavier than usual along the coast (H.N. Kluyver *in litt.*). J. Taapken (*in litt.*) adds that other birds were also involved—Long-tailed Tits, Redpolls (*Carduelis flammea*), Jays and Great Spotted Woodpeckers (*Dendrocopos major*). Further details have been published by G. Bosch, C. Swennen and J. Taapken (*Vanellus*, 1958: 488-489; *Het Vogeljaar*, 5: 100; 6: 56-57 and 75), but only some of the more striking observations can be given here. Movement of Great Tits was seen on Terschelling as early as 15th August, and Coal Tits were first noted near Amsterdam on 9th September, but the main passage was later in September and October. Many tits arrived at Middelharnis, on the coastal island of Over Flakkee, on 5th October, and then on the 6th some two thousand (mainly Blue) tried to fly W.N.W. across the sea at Den Helder, leaving behind them in the dunes about a thousand Coal, numbers of Great and Long-tailed and more Blue. On 20th October a strong passage of the three commonest species, with some Crested Tits (*Parus*

cristatus) and Marsh Tits was seen along the south coast of the IJsselmeer. At Delden there was a strong movement of Blue Tits in the second half of September and the first week of October, mainly in a W.S.W. direction. Coal Tits were observed in many areas, but there were fewer reports of Long-tailed and Crested Tits.

Small parties of Jays were seen moving W.S.W. and S.W. at Deventer, in central Holland, in mid-September, and at Amsterdam from 20th September to early October. Later, in November and December, movements were observed at Middelharnis. The numbers of Jays in Holland in 1957 were, however, very much smaller than those reported in the major influx there in 1955.

Return migration of tits was noted mainly in February and March in an easterly direction; on 30th March (corresponding with the heavy late March movements in Kent) some 500 Great Tits were seen flying east between 18.00 and 19.15 at Middelharnis, and passage was noted on the same day at Hilversum and The Hague. At Middelharnis also, on this day, 35 Jays were seen flying high to the S.E. (Taapken 1958).

Germany

In Germany the movements appear to have been observed mainly on the N.W. coast and adjoining islands. On Heligoland, where there is a small passage of Blue and Great Tits in most years, some 230 Great Tits and 500 Blue, with a few Coal and Long-tailed, were recorded between 22nd September and 15th November. The first Great Tit appeared on 22nd September and the first Blue and Coal four days later, the invasion reaching its peak on 11th and 12th October. Most birds arrived from the north and left in a southerly direction. The majority apparently stayed only a short while, as few were re-trapped, but two Great and one Blue wintered. Of the 104 Blue Tits trapped, 95 were first-winter birds, but rather surprisingly more than half of the 59 Great Tits ringed were adults. On the coastal islands of Neuwerk and Wangeroog the peak dates were also 11th and 12th October, but at Wilhelmshaven maximum numbers occurred about a week later. Blue and Great Tits were seen on the light vessel "Borkumriff" in October and November. On 23rd November some 36 Long-tailed Tits, of which about a third were "white-headed", were recorded moving slowly south-west near Bremerhaven.

No return migration was observed on Heligoland, but strong easterly movements of Great and Blue Tits, with a few Marsh, were seen at Wilhelmshaven on 28th March and 3rd and 25th April 1958 (Vauk *in press*). Further details of tit movements on the coastal islands of Neuwerk, Wangeroog and Nordeney are given by Ringleben (1958). Great Tits were the most numerous, it being estimated that between five and ten thousand passed through Wangeroog from 9th

to 15th October, and flocks were seen until early November. Passage of Great Tits was also noticed inland at a number of places on the N.W. German plain—Aurich, Osnabrück, Brunswick and Schleswig-Holstein. On Neuwerk, where many Great Tits occurred on 11th and 12th October, Blue Tits were first seen on 20th September and Coal on the 17th. Both species occurred on the coast and inland in the same areas as the Great Tits, but in smaller numbers; peak movements on the coast were from 11th to 19th October. Passage of Long-tailed Tits was observed at Osnabrück from the end of October until early November. Ringleben considers that the irruptions were the result of the mild winter of 1956-57 and of a good breeding season in 1957 due to favourable weather.

France and Spain

We have unfortunately been able to gather very little direct information from France. At Ushant, however, two ringing camps were operating from 23rd August to 4th September and from 17th to 28th September. During these periods they trapped 56 Blue Tits and small numbers of Great Tits, Bullfinches (*Pyrrhula pyrrhula*), Siskins (*Carduelis spinus*) and Great Spotted Woodpeckers. The tits invaded the island at the end of September and disappeared in early October; fishermen said that they came from the sea and rested on the boats (*The Ring*, no. 13: 285). Flocks of Blue Tits were also seen migrating near Dijon at the end of September (C. A. Blume *in litt.*), large numbers of tits were noted in the Midi (P. Géroutet *in litt.*), and E. D. H. Johnson informs us that when driving through western France from 2nd to 4th October he found tits very numerous, Blue rather outnumbering Great. The largest numbers were noted in the flat, marshy areas to the north of La Rochelle, and the last evidence of passage was observed at Santillana del Mar, on the north coast of Spain, which could have been reached by coasting movements without crossing any mountainous areas. Elsewhere the Pyrenees may have acted as a barrier, for F. Bernis (*in litt.*) says that he received no reports of any unusual numbers from the Iberian peninsula.

Switzerland

In Switzerland Paul Géroutet (*in litt.*) informs us that there was a heavy migration of Blue, Great and Coal Tits in a general S.W. and S. direction; this was observed in the Alps and Jura, as well as the lower-lying areas. The published summary (Géroutet 1958) shows that the very marked movement of Great Tits began about 18th-22nd September and continued until the end of October, with peak numbers mainly in the middle of the latter month. A mixed flock of Coal and Great Tits was seen at a height of 2,600 m. (over 8,000 feet) in Valais. The

first passage of Blue and Coal Tits was reported at the end of August, continuing in each case until the end of October. The movement of Coal Tits was rather irregular, but very marked in some districts, at least 4,500 being counted at Cernier (Neuchatel) on 21st September. Flocks of Long-tailed Tits were observed at several places in Switzerland in October and November, while Nuthatches (*Sitta europaea*), Treecreepers (*Certhia familiaris*), Marsh Tits, Redpolls and Great Spotted Woodpeckers occurred in small numbers. Goldcrests, with a few Firecrests (*Regulus ignicapillus*), were also noted on passage, sometimes with tits. There was a marked movement of Siskins in October and Jays were seen in many localities from mid-September to the end of October: the Jay passage reached its height about the 6th of the latter month when between four and five hundred were seen at the Col de Bretolet. Siskins, Jays and Great Tits were abundant in W. Switzerland during the winter.

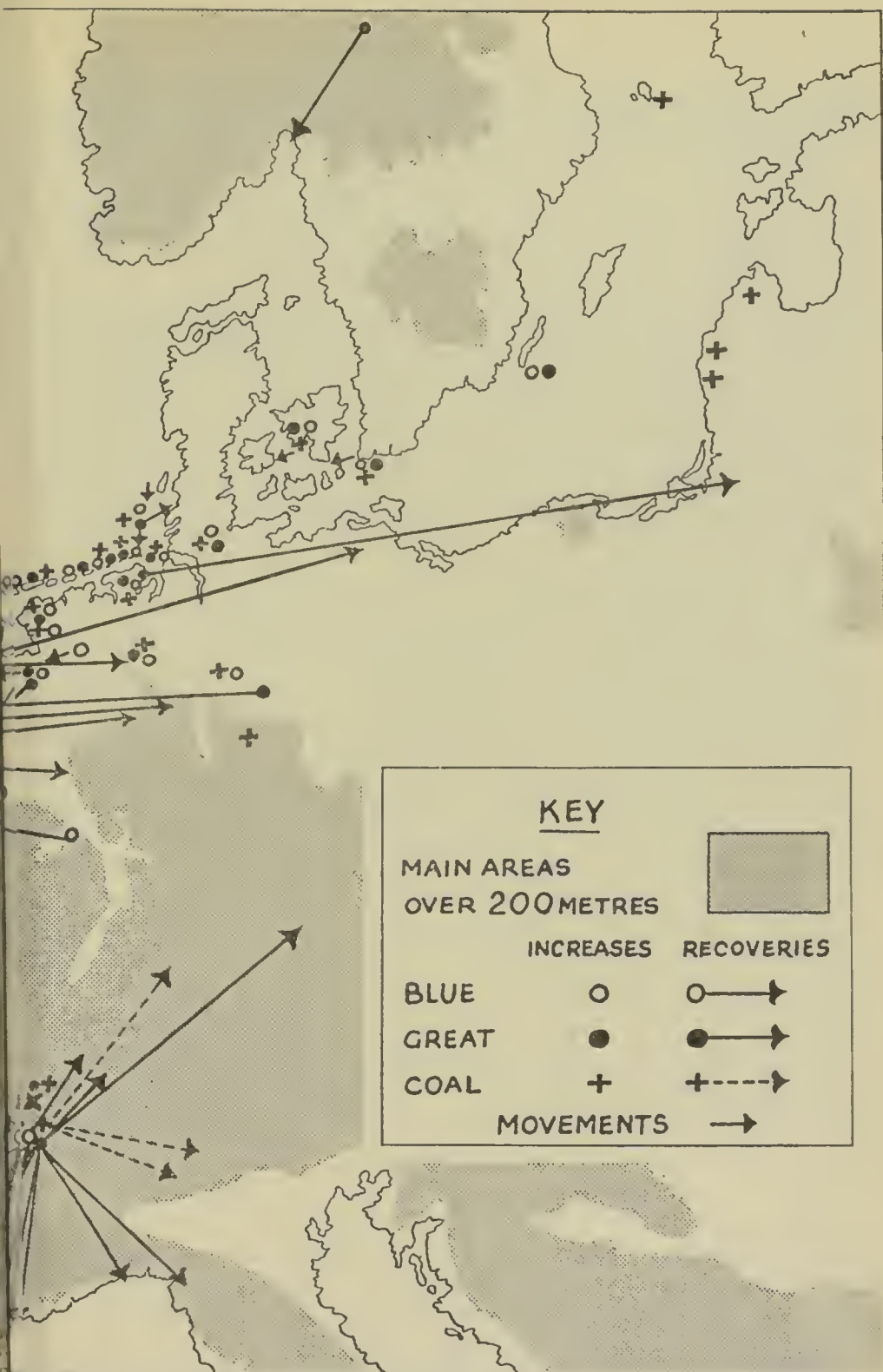
In their report on observations made at the Col de Cou and Col de Bretolet during 1951-57, Godel and Crousaz (1958) state that in most years a more pronounced migration of tits was observed at these two passes (leading to France at some 6,400 feet) than in the lower country. In the autumn of 1957 very large numbers of Great and Coal Tits and fewer Blue were trapped there (1,625, 1,251 and 407 respectively), a large proportion being birds of the year. Godel and Crousaz reach the provisional conclusion that Blue Tits are usually most numerous in September and Great Tits from the beginning of October. (It will be remembered that Great Tit passage was also later in Britain.) A number of the tits ringed at the Col de Bretolet were recovered in the winter of 1957-58 in southern France between the River Rhône and the Alpine frontier with Italy, some reaching the Mediterranean coast; in addition, two Coal, one Blue and one Great were recovered in N. Italy. Another Coal Tit was found in May 1958 at Wurttemberg in Germany (about 210 miles N.E.) and a Great Tit trapped at the Col de Bretolet during the irruption had been ringed as a nestling in June 1957 in Czechoslovakia (some 475 miles E.N.E.).

Scandinavia and the Baltic

The Scandinavian countries appear to have been little affected by the movements. G. Svårdson (*in litt.*) suggests that the birds invading Britain in the autumn of 1957 (especially the Blue and Great Tits) came from an area delimited in the north by the southern tip of Sweden. In Scandinavia, passage of Blue Tits was obvious only at Falsterbo, on the south-west tip of Sweden; there more than five hundred were ringed. A. G. Parsons (*in litt.*) says that very heavy movements of Blue, Great and Coal Tits occurred there at the end of September, and a further exodus of the first two species in early October; there was



FIG. 11. Localities where movements and increases of Blue, Great and Coal Tits (*Parus caeruleus*, *major* and *ater*) were reported on the Continent in autumn 1981, together with the more important recoveries of ringed birds both there and in the British Isles (see also Figs. 4, 5, 9 and 10). Note that the tits from the low-lying



N.W. Europe appear to have kept almost entirely to land below 200 metres, any Central European ones seem to have passed through much more ous areas. On the evidence available the two irruptions appear to have ely distinct geographically

also a heavy passage of Siskins from 23rd September to 10th October. An analysis of the birds ringed during 1947-57 at Ottenby, further north on the east coast of Sweden, showed that in 1957 only Long-tailed Tits and Treecreepers were particularly numerous; numbers of Blue and Great Tits were little above normal and only one Coal Tit was ringed.

C. A. Blume writes that on 29th September he saw four or five hundred Blue Tits, with a few Great and Long-tailed, trying vainly to cross from Falsterbo to Denmark. He also says that in Denmark on 6th October similar numbers of Blue Tits, with some Great, Coal and Long-tailed, were attempting to cross the Great Belt at Stigsnaes (W. Zealand) in a W./S.W. direction. Numbers of tits breeding in Denmark in 1957 were not high, but these birds were more numerous than usual in Copenhagen during the winter (although not apparently in woodland areas).

No unusual numbers of any of the species concerned were reported from Norway (Holger Holgersen *in litt.*) and Finland also seems to have been largely unaffected. J. Koskimies has kindly supplied details of the Finnish winter census figures in 1957-58; these show that, compared with the preceding winter (Koskimies and Rajala 1957), there was little change in the numbers of Blue, Great and Long-tailed Tits, a fall in Coal Tits and marked decreases in Siskins, Redpolls, and Great Spotted Woodpeckers. Reports from the observatory on the Åland Isles (P. Linkola) show that there was *less* movement than usual of Blue Tits, Great Tits, Siskins and Redpolls; there were, however, a small invasion of Great Spotted Woodpeckers, a few flocks of Long-tailed Tits in October (this species does not occur there annually) and a short but definite irruption of Coal Tits in late August and early September.

Further east, E. Kumari, of Estonia, summarising the results obtained from fifty observation posts in the Eastern Baltic between 16th September and 15th October, also reported a distinct invasion of Coal Tits from 20th September to mid-October, but other species of tits do not appear to have been involved. There was an appreciable, though not especially numerous, invasion of Great Spotted Woodpeckers over the whole East Baltic area from the first half of August to mid-September, but later at only a few points in W. Estonia; sixty were seen flying over the sea at Puise in a westerly direction on 10th October. Jay movements of the invasion type began in this area about 20th September (*per* K. Williamson).

No increases or movements of a special character were reported from Iceland (Finnur Gudmundsson), Poland (K. W. Szarski), Eastern Germany (Wolfgang Makatsch), Hungary (A. Keve), Yugoslavia (R. Csornai and R. Kroneisl-Rucner), Rumania (J. Korodi Gal and

Kohl Stefan) or Italy (Sergio Frugis). In Czechoslovakia the numbers of Great and Blue Tits were relatively high, but no large movements were reported (F. J. Turček).

Recoveries of tits ringed on the Continent

Recoveries of tits that had been ringed at the Col de Bretolet have been mentioned above in the section on Switzerland. Some others of birds marked in N.W. Europe are also available. J. Taapken informs us (*in litt.*) that three Great Tits ringed in the nest in Holland in 1957 were recovered between November 1957 and January 1958 in N. France and Belgium, while two ringed in Holland in February and March 1958 were found in the next two months in N. Germany (Saxony and Mecklenburg). Turning to Belgium, a Great Tit ringed there in October 1957 was recovered in France near Paris in November, and one marked in February 1958 was found some 220 miles E.N.E. in Germany (Westphalia) in March; a Blue Tit ringed in Belgium in 1957 was found 115 miles E. near Liège in April 1958 (Verheyen 1958, 1959). An adult Great Tit ringed at Wilhelmshaven in Germany in December 1957 was recovered at Neman, near the Baltic Coast of the U.S.S.R., in February 1959. Unfortunately there have been no recoveries of any of the tits ringed in Sweden at Falsterbo during the movement (R. Nilsson *in litt.*). There were also two interesting recoveries of Jays ringed in Belgium (see Verheyen *op. cit.*): one marked in June 1957 was found in N. France in October of that year, and another ringed in September 1957 was reported some 78 miles E. in Germany in April 1958.

Although there may be other recoveries still to appear, the above, together with the reports from observers (see Fig. 11), suggest that there was little connection between the movements of tits in N.W. Europe and those in central Europe. It also seems that the birds from the low-lying areas in N.W. Europe kept almost entirely to land below 200 metres above sea-level in their movements, whilst the central European tits passed, as in Switzerland, through much more mountainous districts.

OTHER BIRDS IN UNUSUAL NUMBERS

Certain other species occurred in unusual numbers on the coast and elsewhere in the autumn of 1957 and information on these was also requested in order to ascertain whether their movements were linked in any way with those of the tits. They included birds which are of regular but very variable autumn occurrence along our shores—Goldcrest (*Regulus regulus*), Firecrest (*R. ignicapillus*), Redpoll (*Carduelis flammea*), Siskin (*C. spinus*), Tree Sparrow (*Passer montanus*), Dunnock (*Prunella modularis*) and Wren (*Troglodytes troglodytes*). However,

although on occasion they appeared with the tits, an examination of the peak dates shows that there was no general correlation. It has not therefore been thought necessary to deal with these species in detail, although some points are worthy of mention.

Goldcrests, Firecrests, Redpolls and Siskins

Goldcrests were reported in small numbers from some widespread coastal areas—Spurn (Yorkshire) round to Lundy (Devon) and Great Saltee (Co. Wexford)—in late August and early September, and passage continued in many places on the coasts of England, Wales, Isles of Scilly, Channel Islands and eastern Ireland into October and even November: one of a number recorded on light vessels off the Norfolk coasts was seen at Smith's Knoll as late as 3rd November. Numbers were said to be above average at Dungeness (Kent), Portland (Dorset), Bardsey (Caernarvonshire) and Great Saltee, but were less than normal at Spurn. Firecrests, which occurred from 20th September, were reported as noticeably above average only at Portland.

The Redpoll movements may have involved the resident British form *C. f. disruptis*,* some of which are known to emigrate, or *C. f. cabaret* which breeds in central Europe and appears here as a winter visitor and passage migrant (Bannerman 1953). It is unlikely, however, that these two races were often distinguished and only a few odd Mealy Redpolls (*C. f. flammea*), the northern form which arrives in large numbers in some invasion years, were identified. Redpolls were said to have been more numerous than usual in 1957 at most observatories and many other coastal areas on the east and south coasts of England; odd birds were also seen at the Isle of May (Fife) and Saltee where they are normally rare, and there was one *cabaret* at Fair Isle where this form is even rarer. The first Redpolls were reported on the east coast in early September—Isle of May (5th), Spurn (8th), Gibraltar Point, Lincolnshire (6th) and Cley, Norfolk (3rd)—but it was not until the second half of the month that any were noted on the south coast. Peak dates were variable, with some tendency to be later in the south—Gibraltar Point, 16th and 22nd-23rd September; Spurn, 5th-6th October; Dungeness, 12th and 25th October; and Portland, 20th October. This may indicate passage down the coast, but observed coasting movements were confusing. At Dungeness Redpolls were seen going south to the Point and then flying between W. and N.; at other places on the south coast both east and west movements occurred, while at Portland some were seen to emigrate and others coasted west. The three recoveries all showed movement out of the country: two adults marked at Dungeness in

*See the First Report of the Taxonomic Sub-Committee of the B.O.U., *Ibis*, 98: 167.

October and November 1957 were found in Belgium and N. France in November, and a first-winter male ringed at Beddington (Surrey) in late September was recaptured in Belgium in December. There are two earlier records of Redpolls trapped in Holland in October being recovered in England in a subsequent breeding-season.

Siskins were also first reported from the east coast, at Spurn on 31st August and at the Isle of May, Gibraltar Point and Cley in early September, and there were no records from the south coast until the second half of the month. At Spurn and Gibraltar Point numbers were above average in 1957 (both had peak passage on 12th September), but they were below at Fair Isle and the Isle of May. Only a few were seen at Dungeness, but many were reported at Sandwich Bay (Kent) between 18th and 27th September (42 on the latter date), and Portland had an unprecedented year for this species. Lundy similarly recorded the largest passage since 1949, lasting from 7th to 22nd October.

Jays

Two other species prominent in the autumn of 1957 are much more irregular in their movements—the Jay (*Garrulus glandarius*) and the Great Spotted Woodpecker (*Dendrocopos major*). Ticehurst (1932) gives evidence suggesting autumn influxes of Continental Jays into Suffolk, especially in 1910 when other south-eastern counties were also affected; then an influx occurred in Kent in 1947, and a large movement observed in Hampshire in October 1935 may have been due to birds from N. France, although the difficulty of separating Jays of W. Europe (especially Belgium and France) makes proof difficult at times (Bannerman *op. cit.*)*. In early September 1957 there were reports of increases and movements in S. England which may have been due to local birds, but towards the middle of the month there were clear signs of an influx. Between the 14th and 16th a flock was seen flying in from the N.E. at Broomfield (Kent), five flew in from the S. near Rye (Sussex), three appeared to come in off the sea at Aldwick Bay (Sussex) and ten were seen flying low over the waves from the S.E. at Sandwich Bay (Kent). The main invasion was from 19th September to the end of the month, affecting a considerable part of S.E. England (Fig. 12). Most coastal reports were from Kent, but in Norfolk a westerly movement, mainly of single birds, was seen at Horsey from 28th September and some birds came in from the sea there. Near the Suffolk coast, at Badingham, a large increase was noted from 23rd September to 23rd October, and at Ingatestone (Essex) a record number of between 600 and 1,000 Jays was seen moving S.W. on 21st September, the movement continuing on a

*The B.O.U. Taxonomic Sub-Committee recommended that English, Scottish and adjacent Continental populations be treated as a cline (*Ibis*, 98: 163).

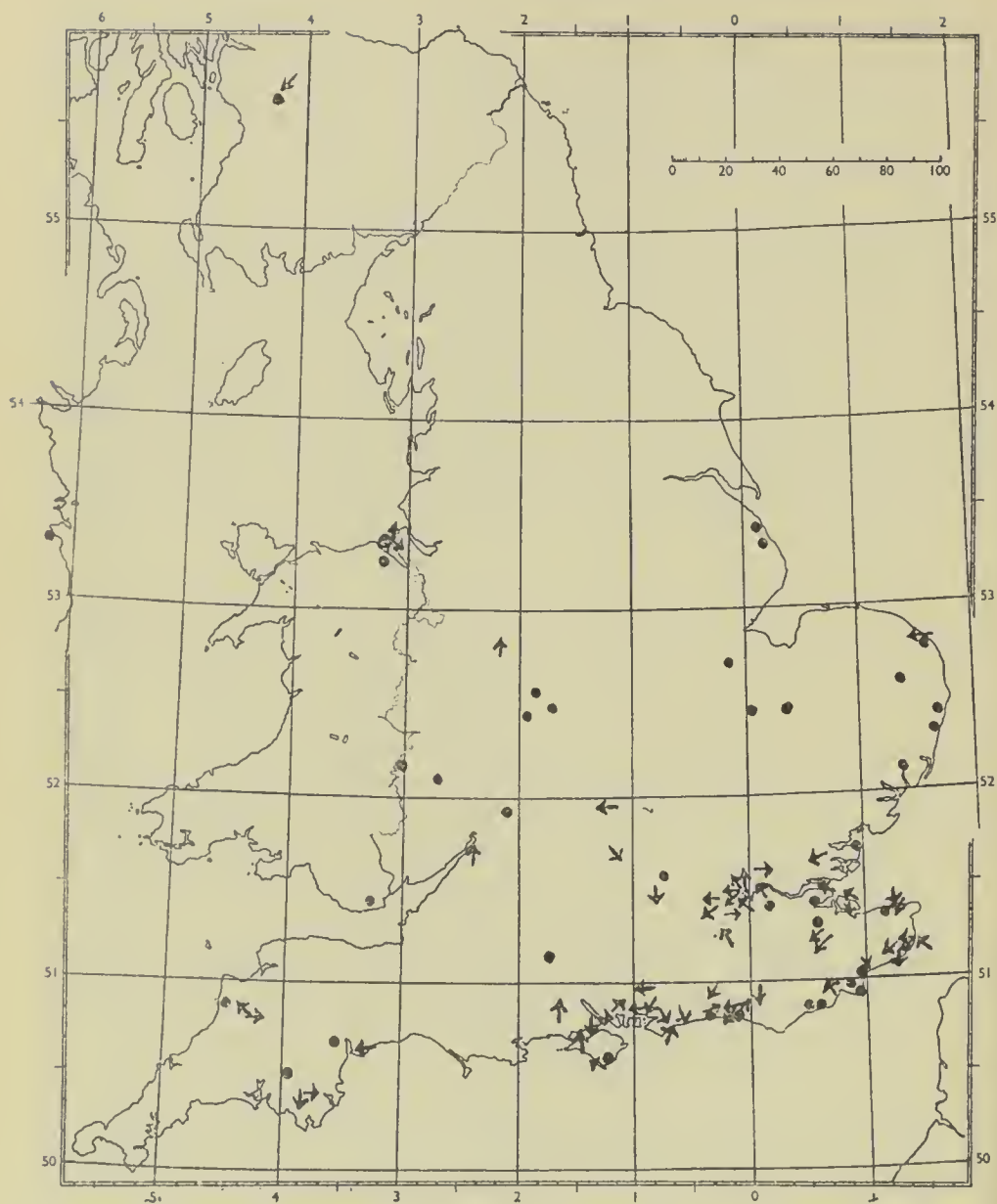


FIG. 12. Localities where movements and increases of Jays (*Garrulus glandarius*) were reported in Great Britain and Ireland from September to November 1957

reduced scale the next day. In the London area, small parties were seen moving in varying directions (mainly S.W. to N.W.) from 20th September to 13th October.

The S.W. movements here and in Kent might account for the movements on or near the Sussex coast, where, although some birds were seen moving inland, most observed towards the end of the month

were moving between S. and S.E. These directions would have taken them out of the country again, although none was seen to fly out to sea.

In the south-west, an influx near Bude (Cornwall) was noted as early as 20th September and isolated movements occurred in Devon in late September and early October. These may reflect the good breeding season reported there, for there are few observations to connect them with the invasion in S.E. England.

There were some reports of movements or increases, mainly in October or November, in central and western England, the most striking being a northward passage in the area of Slimbridge (Gloucestershire) between 1st and 5th October, with over fifty seen flying north in one hour on the 3rd. The reports are too few, however, to decide whether the increases in Cheshire and Flint in early October (with flocks of up to 46 birds moving in various directions at the mouth of the Dee on 4th and 5th) were due to immigrants or local birds wandering after the good breeding season reported in the Merseyside area (*Merseyside Nat. Assocn. Bird Report 1957-58*). During the last week of October about six Jays appeared at Tallaght, near Dublin, where they are normally very rare, and stayed for the winter.

Three Continental specimens were identified, all taken in Kent, two on 23rd September and one in late November. There are no recoveries away from the place of ringing of Jays trapped during these movements. In earlier years four ringed as nestlings were found more than ten miles away (15 to 48 miles, between S.W. and N.N.W.), and a full-grown bird ringed at Dungeness in October 1955 was recovered in Holland in the following June. There were reports from a number of coastal areas in Sussex, Hampshire and Dorset in late April and May 1958 suggesting that some Jays may have been attempting to return (see *Brit. Birds*, 51: 252 and 277, and *The Sussex Bird Report 1958* for fuller details).

Great Spotted Woodpeckers

Small numbers of Great Spotted Woodpeckers were noted in many coastal areas in 1957 (in several of which the species had previously been unrecorded or only rarely seen). Observations came mainly from the east and south of England, from Northumberland to Dorset, but there were also two such records from the west (Skokholm, Pembrokeshire; Hilbre, Cheshire) and one from Ireland (Great Saltee). Most were seen in September and October, with a few into November, and there was no noticeable concentration of records on any particular days. Occurrences as early as July and August in a few areas suggest that some at least were wandering British birds. There were widespread reports inland of increases or appearances in

places where not usually seen. On 10th November seven birds were seen flying north over open country near Cannock, Staffs.

Continental birds may however have been involved in some of the later coastal influxes. Actual movements were rarely reported; most were coasting movements, but occasionally birds were observed flying inland, and on three occasions they were said to have flown in from the sea—at Cley on 6th September, at St. Catherine's on 16th November and at Pett Level, Sussex, on 28th November. No definite Continental sub-species were reported, however, and the six trapped at Dungeness were all referred to the British form on bill size. Previous invasions have been of the Northern form, affecting mainly the east coast of Scotland and of England north of N. Suffolk (Witherby *et al.*, 1938); this was clearly the case in 1949, the last tit invasion year, when Fair Isle, Isle of May, Spurn and Gibraltar Point were chiefly affected (with an odd bird on Lundy) and all birds definitely identified were of the Northern race (*Brit. Birds*, 43: 205-17). There was a much more southerly distribution to the 1957 records, and in view of coastal movements in Holland, and occurrences in Guernsey and Ushant, it is possible that some may have crossed over to S.E. England. Ringing recoveries do not help as no bird ringed during these movements was recovered more than seven miles away.

Treecreepers, Bullfinches and Nuthatches

Three other species deserve brief mention. The British form of the Treecreeper (*Certhia familiaris britannica*) is resident but wanders occasionally to coastal islands. Odd birds were reported from a wide range of coastal areas in the autumn of 1957 (including Steep Holm in the Bristol Channel, Lundy, Skokholm and Bardsey) and there were scattered reports of increases inland; one trapped at Dungeness on 10th October was thought to be either *C. f. familiaris* or the intermediate *C. f. macrodactyla*. There were many reports of increased numbers of Bullfinches (*P. pyrrhula*) inland, but, apart from a single bird on 20th October at St. Catherine's Point (Isle of Wight) and four flying south at the Naze (Essex) on 26th October, the only coastal observations concerned a number at Dungeness from 17th October to 16th December, one of which was seen to fly in from the sea on 16th November. All those trapped there, however, were apparently of the British form. Finally, increased numbers of Nuthatches (*Sitta europaea*) were reported from a few inland areas, but there was no real evidence of movement on the coasts.

SUMMARY OF THE 1957-58 TIT MOVEMENTS

It is clear from the foregoing that movements of tits occurred on an unusual scale in N.W. Europe in the autumn of 1957. Blue Tits

were the most abundant species, but considerable numbers of Great and Coal were also involved. Long-tailed Tits were affected to a much smaller degree, and other species even less. In the British Isles there were signs of unusual numbers and local movements of Blue and Great Tits from late June and these continued on an increasing scale into September. Similar phenomena were noted in some Continental countries. In September strong passage was observed in Belgium, Holland and N. and W. Germany, mainly on the coast but also in some inland areas, leading to a major irruption into the British Isles, which started in mid-September. These movements increased, reaching a peak in most areas in the first week of October and continuing throughout the month and into early November.

In N.W. Europe the movements appeared to be largely W. and S.W., but in the British Isles both the invaders and many native birds moved mainly between W. and N., reaching the west coasts of England and Wales, northern England and, in very much smaller numbers, some parts of Scotland and Ireland. In the British Isles Blue Tits were the commonest; Great Tits came second in the southern half of England and Wales, and Coal in the north. The ringing evidence, the Continental observations and the weather analyses suggest that the tits invading these islands came from a large lowland area of N.W. Europe, including N. France, Belgium, Holland, N. and W. Germany, Denmark and the southern tip of Sweden (but not the remainder of Scandinavia). There is some evidence that birds from this area also moved south into western France, but did not penetrate far beyond the Pyrenees. Blue, Great and Coal Tits from some parts of central Europe (probably southern and central Germany and Czechoslovakia) also appear to have been affected, although the evidence is more scanty, but these birds pushed mainly S.W. through Switzerland into S. and E. France and N. Italy. These movements involved the crossing of mountainous areas, often at considerable heights, whereas those in N.W. Europe were almost entirely restricted to lowland districts (Fig. 11).

During the winter numbers of tits were high in parts of the British Isles (as well as some Continental countries). Return movements were gradual and protracted, but there is evidence from the east and south coasts of England that fairly large numbers of Blue and Great Tits (but few Coal) returned to the Continent in late March and April, continuing on a small scale into May. Return passage in an easterly direction was observed in Belgium, Holland and Germany in March and April, and movements were particularly heavy there and in S. England at the end of March.

THE EVIDENCE OF PREVIOUS TIT IRRUPTIONS

In neither of the two most important recent discussions of irruptions (Lack 1954, Svårdson 1957) were Great and Blue Tits considered. There seems little doubt, however, that both should be regarded as true irruption species which undertake large-scale movements at irregular intervals and in varying numbers and directions. The spectacular irruptions of birds like Waxwings (*Bombycilla garrulus*) and Crossbills (*Loxia curvirostra*) have long attracted attention, but the fluctuations of common breeding species are not easy to establish: inland passage is readily overlooked even now and coastal movements could not be fully appreciated until the time of the present chain of observatories and watchers. However, there are sufficient indications of movements in the past to confirm that the events of 1957-58 were not unique.

The earliest record of such an irruption was at Heligoland over a hundred years ago. Gätke (1895) stated that Great Tits used to appear on the island in large numbers (though apparently such big-scale movements became rarer after the early 1860's) and that from late September to December 1847 a major invasion of Great Tits, with Blue and a few Coal, took place; the last big movement he recorded there was in 1878, when these three species and Long-tailed Tits were involved. In the British Isles most of the old reports were from the eastern coastal counties of England and from Scotland. Nelson (1907) wrote that there were often considerable arrivals of Blue and Great Tits on the Yorkshire coast in autumn, from mid-September to mid-November. He particularly mentioned 1878 (when one of the big movements on Heligoland occurred); then there were unusual numbers of Great Tits in the latter part of October, many being seen with Blue Tits and Wrens at Spurn and Teesmouth on 30th October. Increases of Great Tits were also noted on the Yorkshire coast in 1883, 1884 and 1886 and there were invasions of both Blue and Great in 1889 and 1901. Nelson was one of the few to mention unusual numbers inland, and his description of their behaviour parallels that of many observers in the autumn of 1957—"Inland the Blue Tit has been seen settled on such unusual places as house tops in the centre of large towns during the early mornings of October, which is significant of its being newly arrived, and at this period it may also be frequently observed in the trees right in the heart of our busiest towns." He stated that there was no evidence of any Continental Coal Tits in Yorkshire, but Bolam (1912) thought that some of the odd wandering Coal Tits appearing in Northumberland between October and March had possibly come over the sea and mentioned that they were more frequent than usual in 1898 and 1899. At Spurn, three Continental Great Tits were caught

in October 1947 and March 1948 (Chislett 1953), and on 1st October 1948 a number of Blue Tits trapped there were considered to belong to this race (Chislett and Ainsworth 1958).

Further south, in Lincolnshire, Caton Haigh observed large movements of Blue Tits on the north-east coast in October 1898, 1899, 1919 and 1923 (Smith and Cornwallis 1955). In Suffolk, Ticehurst (1932) described the large numbers of tits, mainly Great but also Blue and Long-tailed, seen moving south in October 1910, at which time Great Tit immigration was recorded in many areas from Shetland to the Isles of Scilly. He gave details of the passage of all four species there in other years, but only in the case of the Great Tit did he identify birds of the Continental form. Gurney (1884) claimed that two or three specimens of the Continental Coal Tit had occurred in Norfolk, and Stevenson (1866) quoted the apparent return movement of Great Tits seen at Great Yarmouth in February 1848, which seems to be the only evidence that the major 1847 irruption of this species at Heligoland may have affected the British Isles. Rivière (1930) gave examples of a few specimens of Continental Great, Blue and Coal Tits identified in Norfolk (some from light vessels) and of apparent immigrations of Long-tailed Tits. In Essex, Glegg (1929) stated that Great Tits had been recorded on light vessels in 1903 and 1910.

In south London, Power (1910) noted that Blue and Great Tits appeared in October, sometimes in considerable numbers, moving in a westerly direction, and suggested that they were probably Continental birds; Coal Tits were also seen (September and October) and much more rarely Long-tailed (October and November) and Marsh (October). Then, as is described in Homes (1957), unusual numbers of Coal Tits were observed moving through central areas of London in October 1930. In Kent, Harrison (1942) identified a Blue Tit of the Continental form in November 1929, and in late October 1947 he witnessed an influx of Great and Blue Tits on the coast of Thanet, finding Continentals of the latter species and also one Continental Coal Tit, the only other tit he met with there during the period (Harrison 1948). Walpole-Bond (1938) described an easterly passage of Blue Tits along the Sussex coast from September to early November, with smaller return movements west in March and early April. Ticehurst (1909) quoted reports of tits, probably Coal or Blue, on lightships in the Straits of Dover in autumn.

In the west of England there appears to be only the isolated record of a large flight of tits, chiefly Blue, in Devon in February 1872 (Pidsley 1891). In Wales, however, there is said to be a marked westerly movement of British Great Tits in late autumn in Pembrokeshire (Lockley, Ingram and Salmon 1949) and a Continental Blue Tit was identified in Radnorshire in late October 1939 (Bannerman 1953).

In view of the prevalence of Coal Tits in the Pennines in 1957, it is interesting that Oakes (1953) said that large numbers appear in October in some years in north and mid-Lancashire, indicating immigration on a widespread scale. He did not suggest that they were of Continental origin, but in an earlier work (Oakes and Battersby 1939) it was stated that a few of the Coal Tits which appeared in Lancashire in November had grey mantles. The species was exceptionally abundant there from October 1930 to mid-January 1931. Coal Tits were also particularly numerous near Heywood (Lancashire) in the winter of 1921-22 (Whittaker 1935).

Baxter and Rintoul (1953) described marked immigrations of Continental Great Tits in Scotland in the autumns of 1910, 1914 and 1932, with odd birds in other years. Continental Blue Tits are more rarely seen in Scotland (though a large influx including at least one Continental bird was reported in Shetland in 1932) and Continental Coal Tits have seldom been identified; these movements have been noted mainly in the northern islands. In Ireland Great Tits were reported from lightships on two occasions in October 1899, but there is no evidence of Blue Tit migration there, though odd birds have occurred at isolated stations (Kennedy, Ruttledge and Scroope 1954).

From these scattered records it is clearly impossible to compile any complete list of tit invasions in the British Isles. The years for which we have records of coastal movements where both Blue and Great Tits were involved are 1878, 1889, 1901, 1910, 1932 (Scotland only), 1947, and perhaps 1935 (Scotland). Great Tits only were noted in 1883, 1884, 1886 (Yorkshire) and 1914 (Scotland), and Blue Tits only in 1898, 1899, 1919, 1923 (Lincolnshire), 1926 (Scotland), and possibly 1929.* The Heligoland movements in 1847 may have affected this country; those of 1878 certainly did. These records depend mainly on the presence of interested observers on the coast at the right time, and are certainly incomplete, though it is also probable that the irruptions varied greatly in magnitude. Lt.-Col. W. M. Logan Home has kindly supplied details of attacks on paper in earlier years that were reported to him in connection with the 1949 enquiry (Home 1953), and they show that there were more than usual in 1925, 1934, 1938 and 1940. The figures are too small to be conclusive, but it is interesting that G. L. Charteris (*in litt.*) trapped very large numbers of Blue Tits in the winter of 1934-35.

To this list of probable invasion years must be added 1949, when there was a major irruption for which much fuller records are available, and 1954, when there was a more limited influx. By 1949, six coastal

*We have seen that, as in 1957, definite records of Continental races in any of these years were few, but it would now appear likely that most records of coastal movements on a large scale in the east or south do signify invasions.

observatories were in operation and their reports on the autumn movements (*Brit. Birds*, 43: 205-217) show that there was a considerable passage of Blue and Great Tits, with some Coal and Long-tailed, at Gibraltar Point; also smaller numbers of Blue Tits at Spurn and single ones at the Isle of May and Skokholm (which recorded also its first Great Tit and second Coal Tit). At Dungeness, M. L. R. Romer (*Brit. Birds*, 42: 386-387) gave evidence of the arrival of Blue, Great and Coal Tits from the Continent, and in central London a marked influx of tits, chiefly Blue but also Great and some Coal, Long-tailed and Marsh, was observed (*London Bird Report 1949*: 14-15). The great increase at this time in many inland areas was stressed by Logan Home (*op. cit.*).

In 1954, there was an influx of Great and Blue Tits with a few Coal, at Portland in October and early November, and Continental birds appeared to be involved (Ash 1956). No special movements of tits were, however, reported from observatories on the east and west coasts (Cornwallis 1955; Davis and Weaving 1955).

(*To be concluded*)

Studies of less familiar birds

104. Radde's Bush Warbler

By Irene Neufeldt

(Plates 13-18)

ON 5TH OCTOBER 1856 Gustav Radde found a leaf-warbler he had never met before near Lake Tarei Nor in eastern Transbaikalia. Later he named it *Sylvia* (*Phyllopneste*) *schwarzii* in honour of his friend the astronomer Schwarz (Radde 1863). This was the bird that was to become known as Radde's Bush Warbler (*Phylloscopus schwarzii*). A detailed plumage description of the adult of this species is given in *The Handbook* and the main field characters are mentioned beneath the accompanying photographs (especially plate 13), so these need not be repeated here. The breeding range is confined to a narrow part of southern Siberia (from the Altai and Salair mountains in the west to Sakhalin Island in the east) and to north-eastern China and North Korea. It winters in southern China, Vietnam, Laos, Burma, Thailand and Cambodia. To western Europe it is a very rare vagrant that has been recorded only twice: in England near North Cotes, Lincolnshire, on 1st October 1898 (Caton Haigh 1898, Saunders 1899); and in Germany on Heligoland on 18th October 1930 (Drost 1931).

Detailed data on the breeding biology of this interesting warbler are absent from both the English and the Russian literature and only three authentic nests have previously been described—two from the Soviet Union (Shulpin 1928, Yamashina 1935) and one from Korea (Austin 1948). As Harber (1955) has written in reviewing Ptushenko (1954), "the eggs found by Smirnow and given doubtfully as belonging to this species in *The Handbook* were ascribed to it in error". The author was therefore very lucky to find two nests in 1958 and 1959 on the Zeya-Amur plateau in eastern Siberia. The short outline which follows is largely based on observations made at these nests and is intended to supplement the necessarily very sketchy account given in *The Handbook*.

On its way from its winter quarters in Indo-China Radde's Bush Warbler does not cross Central Asia, but migrates to the north over the middle and eastern parts of China to Manchuria. There the main route divides into two: some go a short distance to Ussuriland and Sakhalin Island, while others make the very long journey to the Altai mountains along the southern edge of Siberia. Because of the long way it has to come the species arrives in the western part of its breeding range very late, in the second half of June, but of course it reaches Amurland considerably earlier than it does the Altai and in 1959 the first arrivals were noted on the Zeya-Amur plateau on 17th May. They kept to dense swampy growths of pygmy birch (*Betula fruticosa*) and Radde's willow (*Salix Raddeana*), among bushes on river banks and along roadside ditches, the males singing casually as they searched for food. In the same habitats Dusky Warblers (*Ph. fuscatus*) and Yellow-breasted Buntings (*Emberiza aureola*) could also be seen. By 22nd May most of the Radde's Bush Warblers had moved on and the few that stayed to breed shifted from the swampy lowland to the foothills and the slopes above.

The typical breeding habitat of Radde's Bush Warbler on the Zeya-Amur plateau is in mixed forests on the lower hill slopes (plate 14). Usually such forests are rather sparse as a result of intensive felling and frequent fires. They are composed of medium-sized pines (*Pinus* spp.) with scattered Mongolian oaks (*Quercus mongolicus*) and black birches (*Betula dahurica*) on the lowest parts; a very few high old pines tower above the rest. Under the sparse tree cover there are dense and impassable thickets of stunted oaks and bushes of *Lespedeza bicolor* and *Rhododendron dahuricum*. Hazels, young birches and aspens seldom occur in these places. The grass beneath the trees is short but very thick. This kind of forest is not the only habitat of Radde's Bush Warbler in Amurland, however. At some distance from the Amur valley the mixed forests on north-eastern and northern slopes gradually change and the pines become replaced by Siberian larches (*Larix*

sibirica). Such sparse larch-oak forest with scattered birches and dense undergrowth of *Rhododendron*, *Lespedeza*, *Salix floderskii* and *Rosa acicularis* is also populated by this species.

Radde's Bush Warblers are not numerous on the Zeya-Amur plateau and in the breeding period it is not possible to hear more than two singing males from any one place. Consequently each pair has a large territory which tends to occupy a hill-slope all the way from the foot to the top. The male regularly visits every part of his territory, but he is never aggressive towards other species breeding in it. Siberian Rubythroats (*Luscinia calliope*), Gray's Grasshopper Warblers (*Locustella fasciolata*), Thick-billed Warblers (*Phragmaticola aëdon*) and Brown Shrikes (*Lanius cristatus confusus*) nest in the same thickets. Incidentally, the Thick-billed Warbler and the Brown Shrike are mocking birds and very often add parts of the Bush Warbler's songs to their own. The male Bush Warbler chooses a group of trees, or perhaps a single high one, where he can be seen constantly. Sitting on any protruding twig he sings all day long, though more intensively in the mornings. Now and again he stops and begins to search for insects, but he soon flies across to another high tree and goes on singing. Sometimes, at moments of great excitement, the male comes down from his high perch and, following the female, sings as he flies across from the top of one bush to another. By contrast, the female is very shy and silent. All the time she keeps among dense thickets and only very seldom ventures into even the low trees when searching for food for the nestlings. In fact, up to the time that these hatch it is almost impossible to locate her: only the very soft whistle she gives in response to the song of the male enables one to detect her presence.

The 1958 nest (plates 15a and 18b) was in the larch-oak habitat and the 1959 one (plates 13, 16, 17 and 18a) in the pine-oak forest. As with many other species of warblers, the hen alone did the building. The male sang near-by during that period and followed his mate when she was carrying nest material, but only very seldom did he approach her while she was picking up the material or busy with construction. The nests were large in proportion to the birds: in the two examined the outside diameter and depth were 170 and 176 mm. and 112 and 115 mm. respectively, while the diameter and depth of the cup were 70 mm. and approximately 60-68 mm. They were spherical with a side entrance like the nests of all *Phylloscopus* warblers: this entrance may evidently be located at the very centre or somewhat nearer to the top (compare plates 18a and 18b). The outside walls were built of dead stems and leaves of grasses picked up from the ground near-by. In the 1959 nest pieces and inner fibres of bark were also used (plates 13, 16, 17 and 18a). The outsides were very friable, but the insides,

built of short dry grass-blades and *Lespedeza* leaves, were much more compact. The cup of one nest was lined with feathers of the Hazel Hen (*Tetrastes bonasia*): Hazel Hens were very common in the area concerned and there were plenty of their feathers lying about as it was the moulting period for the males. The second nest, however, had no feathers in its lining. This one was built at a very low height, only 15 cm. (about 6 inches) above the ground, at the base of a *Rhododendron* bush. The first nest was on a small *Lespedeza* bush and at a height of 70 cm. (about 28 inches). Neither was attached to twigs or grasses.

Within a day of the structure being completed, the hen laid the first egg and in each case this was on 21st June. Thereafter eggs were laid at a rate of one a day until the full clutch of five or six (plate 15a) was complete. The measurements of the six eggs in one clutch were 17.5×14.0 mm. (two), 17.5×14.2 mm., 18.0×13.7 mm., and 18.0×14.0 mm. (two). All eggs were white with pale rusty-yellowish dots and spots. The ones found by Shulpin (1928) in Ussuriland, which are now in the collection of the Zoological Institute of the Academy of Sciences in Leningrad, are rather evenly marked with very tiny speckles and have some larger spots concentrated at the bigger end. Those shown in plate 15a also had very tiny markings, but the larger spots were few and spread regularly over the whole surface.

Incubation began with the laying of the last egg and it was found that the hen alone carried out this task. The male was not seen to feed his mate on the nest and she had to leave it and forage for herself. At one nest incubation lasted 13 days and the young hatched over a period of 24 hours. The skin of the newly hatched nestlings (plate 15b) was yellow-rose in colour and the greyish-white down was long (11-12 mm.) but sparse. The nestling is not described in *The Handbook* and so it should be added that the distribution of the down was inner supra-orbital, occipital and humeral. The inside of the mouth was yellow and there were no tongue spots. Hatching weights varied from 0.9 to 1.0 gm.

It was found that the male took no part in the care of the young. He sang near the nest, however, as at the very beginning of the breeding period and in this respect his behaviour was very similar to that of the male Chiffchaff (*Ph. collybita*). During the first few days the young needed to be brooded almost continuously; the hen left the nest very seldom and for short periods only. In the dense thickets of the foot-hills it is especially cold and damp in the early mornings, so that she had to remain on the nest for a long time. At first the hungry young would move about restlessly and then with necks stretched out and bills wide open they would eagerly begin to ask for food (plate 18a). When this happened the hen flew off to search for



PLATE 15. Radde's Bush Warbler (*Phylloscopus schwarzi*) at nest, Amurland, U.S.S.R., 13th July 1959. Bigger and longer-tailed than a Chiffchaff, it has a thick bill, long cream superciliary reaching nape and contrasting with dark eye-stripe, and pale brown mottling on cheeks and ear-coverts (pages 117-122) (photo: Irene Neufeldt)



PLATE 14 (above). The habitat of Radde's Bush Warbler (*Phylloscopus schwarzi*) in Amurland, U.S.S.R., is on the lower hill slopes where open forests of pine or larch and oak have a dense undergrowth of *Lespedeza* and *Rhododendron* (page 118)

PLATE 15 (right). The nest has a side entrance and this one was loosely built of grass and lined with feathers (page 119); 5-6 white eggs with pale rusty-yellowish markings are laid. The blind newly-hatched nestling is yellow-rose in colour and has long but sparse greyish-white down (page 120) (photos: Irene Neufeldt)





PLATES 16 and 17. Sequence of female Radde's Bush Warbler (*Phylloscopus schwarzi*) bringing and giving food to the nestlings, and then waiting for and removing a faecal sac, U.S.S.R., July 1959 (plate 16b, below, was actually taken six days after the others, on the 20th, when the young were 10-11 days old). Note again the points





mentioned on plate 13, as well as the long and stout yellowish tarsus and, in plate 17a above, the contrast between pale brown upper mandible and yellowish-flesh lower. The diagnostic long 1st primary, twice as long as the coverts and half the length of the 2nd, shows on plate 17b (below) and plate 13 (*photos: Irene Neufeldt*)





PLATE 18. Above, female Radde's Bush Warbler (*Phylloscopus schwarzi*) with chicks one day old, U.S.S.R., 10th July 1959. Below, nestlings one week old, 16th July 1958. The upper nest was six inches off the ground in *Rhododendron*, while the lower was at a height of about 28 inches in *Lespedeza* (page 120) (photo: Irene Neufeldt)





PLATE 19. Rufous Warbler (*Agrobates galactotes*) at nest, Spain, June 1959. Not really a warbler at all (page 122), this bird is easily recognised by its reddish upperparts and chestnut tail tipped with white and black, a feature not shown here. Note the cocked tail, rather thrush-like shape and heavy bill (*photo: Antonio Cano*)





PLATE 20. Above, typical stance of Rufous Warbler (*Agrobates galactotes*); the tail is continually fanned or jerked up and it is a slim bird with long legs and a whitish superciliary (photo: Antonio Cano). Below, hedge of prickly pear (*Opuntia*) where the large, rough and untidy nest is often found in S. Spain (photo: Eric Hosking)



insects near-by, but very often she came back without any as they are few on cold mornings. Left without warming the nestlings soon became flaccid and paid no attention to the return of their mother (plate 13).

The hen did not begin to feed the young until after the last one had hatched, which meant that the eldest received nothing until it was nearly 24 hours old. At first the food consisted of spiders, aphids, flies, mosquitoes, gad-flies, small caterpillars and moths, the last especially Tortricidae (plate 16b), but by the time they were a week old the nestlings were eating much larger insects including various Orthoptera and the caterpillars of some of the bigger moths. Faecal sacs were carried away from the nest by the female (plate 17b).

When only one day old the eyes of the nestlings began to slit (plate 18a) and this was very noticeable by the fourth day (plate 13). By this time the sheaths of the primaries began to show. The eyes of the young were fully open by the sixth or seventh day and then the tips of feathers started to emerge from their sheaths on the breast and afterwards on the back and neck (plate 18b). About this time the young birds became very timid. They no longer opened their mouths widely at any loud sound or the shaking of the nest or at the appearance of bird or human near-by. Instead they tried to hide in the back of the nest and frighten the enemy by snapping their bills.

The young left the nests on 22nd-24th July, at 13 or 14 days, still unable to fly. Their weight at this time was 11.3-12 gm. compared with the 13.2-15 gm. of the adult birds. Able to climb well on twigs and stems, they kept near the ground in bushes and grass. After two or three days they could fly short distances between trees and in a week the brood had moved a distance of 100-150 yards from the nest. The male Bush Warblers followed the broods, still singing but not so intensively and now often on low bushes and chiefly in the mornings. In 1959 the last song was heard on 8th August. In Amurland the autumn migration starts about 20th August and lasts until the beginning of October.

The juvenile plumage of this species differs from the spring and summer dress of the adult in its strong suffusion of sulphur-yellow below and olive-yellow above. The first-winter dress is similar to that of the freshly moulted adult except that the breast and lower throat are brownish and the belly is yellower.

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Photographs of Rufous Warbler by Antonio Cano

(Plates 19-20)

THE RUFOUS WARBLER (*Agrobates galactotes*) was one of the earliest species to appear in our photographic series, as long ago as 1947 (*Brit. Birds*, 40: 335-336 and plates 32-34). A fairly full text based on notes supplied by the photographer, A. Stubbs, was published at the same time and the reader is referred to that and to *The Handbook* for information about this bird. The points brought out by Antonio Cano's photographs, and also by the habitat photograph supplied by Eric Hosking, are mentioned in the captions beneath the plates and we leave these to speak for themselves. However, it is worth taking this opportunity of drawing attention to the fact that many authorities no longer regard this species (nor the Ethiopian genus *Erythropygia* with which it is now usually merged) as a true warbler. R. Meinertzhagen (*Bull. B.O.C.*, 69: 110) believes that the genus *Erythropygia* (including *Agrobates*) is "on the whole" better placed with the Old World warblers, but J. P. Chapin (*Bull. Amer. Mus. Nat. Hist.*, 75A: 495) and other authors consider that it is more correctly assigned to the Turdinae. C. Vaurie in his *The Birds of the Palearctic Fauna* (pp. 354-356) calls the present species the Rufous Bush Robin and places it between the chats (*Oenanthe*, etc.) and the rock thrushes (*Monticola*).

I. J. F. - L.

Booted Warbler at Fair Isle : the problem of identification

By Peter Davis

A BOOTED WARBLER (*Hippolais caligata*) was caught by R. H. Dennis and J. Bazey in the gully trap at Fair Isle in the early morning of 29th August 1959. It was released at the observatory after examination and on the 31st was seen on a cliff near-by. The only other records in western Europe are from Heligoland on 28th September 1851 and from Fair Isle on 3rd September 1936.

The following description was taken from the bird in the hand:

Upper-parts, head, wing-coverts and upper tail-coverts: pale sandy grey-brown (without any olive tint), a little darker on the crown; a fairly distinct buffish-white superciliary, most obvious in front of the eye, and narrow orbital ring of the same colour. *Flight-feathers:* rather darker than upper-parts, with buff edgings to the outer webs; outermost tail-feathers with buff-white outer webs, and penultimate pair marked buff-white at the tips of the outer webs. *Under-parts and axillaries:* silvery-white, with a buff tinge on the flanks and across the breast. *Soft parts:* bill (slender for a *Hippolais*) with dark horn upper mandible, lower tipped same but very pale pinkish at base; inside of mouth daffodil yellow; legs pale brown with blue-grey overtone, as in the commoner *Hippolais* species; iris dark olive. *Measurements:* wing 62.5 mm., bill 15.5, tarsus 21, tail 53 (outer feathers 50); bill 3.5 mm. wide at base of nostrils. *Wing-formula:* 1st +8, 3rd and 4th longest, 2nd -6, 5th -1, 6th -3.5, 7th -5, 8th -8.5; 3rd to 5th emarginate, 6th slightly so; secondaries equal to 10th primary. *Weight:* 8.4 gm. at 06.30 G.M.T. The entire plumage (including body-feathers) appeared worn and faded; the tips of the longest primaries were slightly chipped, the tail more abraded.

The specimen presented a nice problem in identification, which would have been greater had we not recently received from Kenneth Williamson his "bird ringer's guide" to the rarer warblers (unpublished), which he had prepared after an examination of skins in the national collection at the British Museum (Natural History). One undated specimen of the closely similar eastern form of the Olivaceous Warbler (*H. pallida elaeica*) was available at Fair Isle for direct comparison; this had rather darker and greener upper-parts than our capture, no orbital ring and a broader bill. Only one person present, W. H. Tucker, had seen a live Olivaceous Warbler—the Portland bird of 1956—and he considered that that had been a good deal darker than the bird before us.

We had to consider not only the resemblance between the Booted Warbler and the various forms of the Olivaceous, but also apparent divergences of size and colour between our bird and the available

descriptions of *H. caligata*. The most detailed of these descriptions were of the typical form, to which the original western European specimens were referred. Both *The Handbook* (2: 68) and Wardlaw Ramsay (1923) state or imply that *H. c. caligata* has darker upper-parts than *H. p. elaeica*; Williamson's "guide" describes the upper-parts as grey-brown in worn dress, greyish-olive (1st-winter) or warm brownish-olive (adult) in new plumage. Our bird, like the Heligoland specimen described by Gätke (1895), was worn and faded, and this could account for its paleness. There is, however, a larger and paler eastern form of *H. caligata*, Sykes's Warbler (*H. c. rama*), to be taken into account; and, though it would be unwise to be dogmatic about the taxonomic position of an isolated specimen, the measurements of our bird seem more normal for a bird of the eastern form.

The following table compares the important measurements of the recent Fair Isle bird with those of the two main forms of *H. caligata*, of *H. p. elaeica* (the eastern form of the Olivaceous Warbler, on the British List) and of *H. p. opaca* (the larger and longer-billed western Mediterranean race). The typical form of *H. pallida* (Egypt) is not included for lack of detailed measurements; it is of similar size and structure to *H. p. elaeica*, but is paler and according to Wardlaw Ramsay has a long second primary like the eastern form.

TABLE I—MEASUREMENTS OF BOOTED WARBLER (*Hippolais caligata*)
AND OLIVACEOUS WARBLER (*H. pallida*)

The figures used are a combination of those given in *The Handbook* (H) and in Kenneth Williamson's unpublished "guide" to the rarer warblers (W).

	Fair Isle bird	<i>H. c.</i> <i>caligata</i>	<i>H. c.</i> <i>rama</i>	<i>H. p.</i> <i>elaieica</i>	<i>H. p.</i> <i>opaca</i>
Wing	62.5	55-63	59-64	63-71	64-72
Tail	53	45-54	50-58	50-57	52-62
Bill (to skull)	15.5	11.5-15	14-16	(H) 12.5-14 (W) 14.5-16.5	17-19
Breadth of bill (at base of nostril)	3.5	(W) finer than <i>H. pallida</i>		(W) 4-4.5	(W) 5-5.5
1st primary . .	+8	(H) +3-7 (W) +3-10 ("usually longer in <i>rama</i> ")	(H) +5-9	+3-7.5	+6-8
2nd primary	=7-8th	=6-8th (usually 6-7th)	=7-9th (usually 7-8th)	=5-7th (occ. 7-8th)	=7-8th
Emargination	3rd-6th	3rd-5th (occ. 6th)	3rd-5th (often 6th)	3rd-5th	3rd-5th

It will be noted that, apart from wing-length, the dimensions of the bill and the slight emargination of the sixth primary in some *H. caligata* seem to be the only really diagnostic structural features, though the lengths of the first and second primaries will be corroborative in many specimens.

The typical Booted Warbler nests from the Moscow area eastward to West Siberia and south-eastward to the Caspian Sea and the southern Urals. Sykes's Warbler breeds from Transcaspia and Iran east to Sinkiang. There is a considerable area of intermediacy or hybridisation between the two forms, from the Kirghiz Steppes to western Mongolia. Both forms winter in India, mainly in the northern half of the sub-continent, but *H. c. rama* migrates to Southern Arabia also (Vaurie 1959).

On its release the Fair Isle bird flew to the cliff and settled beneath an overhanging tuft of grass. Even in the shadow it seemed a remarkably pale little warbler—the colour of weak milky tea—and when it moved into the light this was still the only feature that attracted the attention; the eye-stripe was inconspicuous and the colour seemed almost uniform from a distance of less than twenty yards. It disappeared from view, and was not rediscovered until two days later, in the cliffs of a neighbouring geo. Here it was watched for nearly an hour by R.H.D. and others. It spent the entire period restlessly hawking for flies—the prey included crane-flies (*Tipula* sp.)—or flitting about the rock-face and probing among the scattered clumps of vegetation. Though searched for later, it was not seen again.

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Obituary

Evelyn Vida Baxter (1878-1959)

MISS EVELYN VIDA BAXTER, LL.D. (Glas.), M.B.E., F.R.S.E., died at her home in Upper Largo, Fife, on 1st October 1959 and an era in Scottish ornithology was thus brought to a close—an era which began with the faunal studies of J. A. Harvie-Brown and culminated in the two-volume publication of *The Birds of Scotland* by Dr. Baxter and her life-long friend and close companion, Miss L. J. Rintoul.

It was a period of intensive work on distribution, status and migration, and Dr. Baxter and Miss Rintoul made a contribution to the study of birds in Scotland which will never be surpassed; their names have been household words with us for over half a century. It is impossible to write of one without introducing the other member of this indefatigable team.

Their first important contributions to ornithology began in 1907 with their earliest visits to the Isle of May where they went regularly to study migration up to 1935. In 1918 they published a valuable paper in *The Ibis* on the effect of wind on bird movements in which they stated that "the deviation from the direct route is largely, perhaps mainly, due to drift". At the time, these conclusions were directly at variance with the generally accepted views of the great Eagle Clarke.

In 1910 the two ladies took over the editing of the annual *Report on Scottish Ornithology*, which involved them in a vast correspondence with observers all over the country. This *Report* ceased when the results of all their painstaking work were included in the production in 1928 of *The Geographical Distribution and Status of Birds in Scotland*. After this, they wrote an annual paper on "Notes on the status of birds in Scotland" in *The Scottish Naturalist* until the advent of the Second World War in 1939, and in 1935 they published *A Vertebrate Fauna of Forth*. This was followed finally in 1953 with their great work on *The Birds of Scotland* which will remain a land-mark in Scottish ornithology and a fitting memorial to the joint authors.

In the spring of 1953 Dr. Baxter suffered the sad loss of Miss Rintoul, but took this blow with characteristic fortitude. In 1954 members of the Scottish Ornithologists' Club were delighted when she agreed to act as Convener of the Scottish Bird Records Committee, and she was responsible for the compilation of the annual reports of this Committee until her death. She was the first woman Vice-President of the British Ornithologists' Union and was awarded the Union's Gold Medal at the Centenary Celebrations in 1959.

Dr. Baxter was, with Miss Rintoul, a joint Founder President of the S.O.C. At the "Coming of Age" Dinner of the Club, in 1957, the members presented her with a clock inscribed "As a token of our affection and esteem"; and all present on that memorable occasion will remember the standing ovation which was accorded her. She took an active interest in the affairs of the Club right up to the end and we shall always cherish the memory of her sitting in her accustomed seat near the front of the hall at our meetings and lectures; when for the first time she was not there and we all stood in silence to mourn her passing, the sense of our loss was grievous.

Members of my own generation who benefited so much from her sympathetic encouragement and wisdom have felt her death acutely.

Well do I remember the advice she gave me as a small boy: "Never publish any record unless you are 100% certain of your identification; if you are found to have made an error, you are damned for life!" What better counsel could be given to the young?

In thinking of Evelyn Baxter, memories crowd thick and fast. When at the age of 76 she motored along from Largo to Cultsness, pulled on her gumboots and took barbed wire fences in her stride to see the first Wilson's Phalarope to be recorded in Europe, I remember her enjoyment and undisguised excitement; indeed I recall wondering which gave me more pleasure—watching the bird or her in action! Then there was the first occurrence in Scotland of the White-rumped Sandpiper: we sat for hours together on the mud at Gladhouse reservoir watching this small wader—she watching intently through her binoculars and dictating notes to me on the spot. She was a very remarkable old lady and we shall not see her like again. G.W.

Notes

Duration of dives of Black-necked Grebes.—*The Handbook* gives the recorded lengths of dives of Black-necked Grebes (*Podiceps nigricollis*) as ranging from 9 to 50 seconds and adds "but about 25-35 seems most usual". At King George VI Reservoir, Staines, Middlesex, on 15th September 1959, two different birds were each timed on six consecutive dives, these being spread over a period of 10-15 minutes. The respective figures were 55, 55, 52, 54, 57 and 50 seconds and 58, 59, 65, 68, 37 and 64 seconds. Thus only two of twelve dives were within the range given in *The Handbook*. The birds were not travelling across the reservoir and so it seems safe to assume that they were searching for food which must have been either far below the surface or very scarce. RICHARD CARDEN

Fulmar incubating eggs of Herring Gull.—With reference to Dr. J. Morton Boyd's note (*Brit. Birds*, 52: 163) about a Fulmar (*Fulmarus glacialis*) incubating the eggs of a Great Black-backed Gull (*Larus marinus*), I found a similar happening on Craigleith in the Firth of Forth on 9th June 1959. I saw a Fulmar sitting on what seemed to be a very large nest and, on climbing down and dislodging the bird, was surprised to find two Herring Gull (*L. argentatus*) eggs. P. B. BROWN

Shelducks diving at a Marsh Harrier in unison.—On 15th June 1959, in Suffolk, I witnessed an attack by a pair of Shelducks (*Tadorna*

tadorna) on a Marsh Harrier; it seemed remarkable both for its duration and the method employed. A pair of Marsh Harriers were breeding in an extensive reed-bed and for fully an hour and a quarter the male was flying continuously to and fro over the area, often at a height of about a hundred feet. For almost the whole of this time it was being harassed by the Shelducks, both of which flew after it and now and then at it. Towards the end of the period I watched them, however, a different method was used. The Shelducks, flying close together, climbed well above the harrier which was itself at a fairly considerable height. They then turned and dived at it in unison. Their previous attacks had been avoided without apparent effort, but this time the harrier was forced to side-slip and drop many feet in the process. Such an action on the part of the Shelducks, which presumably had young in the vicinity, would seem to be very unusual and I have been unable to trace a similar occurrence.

C. M. VEYSEY

Broken eggs in the nests of Sparrowhawk and Golden Eagle.—

The frequent and mysterious breakage or disappearance of eggs in the eyries of Peregrines (*Falco peregrinus*) (*Brit. Birds*, 51: 23-26) is matched by similar happenings in the nests of Sparrowhawks (*Accipiter nisus*). Eight instances in 48 nests seen with eggs between 1943 and 1959 are set out below:

(1) *Great Orton, Cumberland*. May 1947. Empty nest with remains of eggs below.

(2) *Finglandrigg, Cumberland*. 26th May 1952. c/4 and remains of another egg below.

(3) *Fingland, Cumberland*. 2nd June 1953. Empty nest with remains of two eggs below.

(4) *Bethesda, Caernarvonshire*. 20th June 1954. 1 addled egg and one small young in nest, with remains of at least one more broken egg below.

(5) *Richmond, Yorkshire*. 5th June 1955. c/1 and remains of at least two more eggs below.

(6) *Raughtonhead, Cumberland*. 31st May 1958. c/3 and remains of another egg below.

(7) *Glasson, Cumberland*. 26th May 1959. c/2 and remains of at least another egg below.

(8) *Kirkbride, Cumberland*. 26th May 1959. c/3 and remains of at least another egg in the nest.

In most cases varying-sized fragments of shell were found on the ground below, but occasionally there were remains actually in the nest. These breakages had all occurred well before hatching time, and in each instance only pieces of shell were left, with no traces of the egg contents. Appearances suggested strongly that the cause of breakage was the same as in the Peregrine and I am inclined to believe that the eggs were eaten or otherwise destroyed by their owners. They had not been tipped overboard intact but had first been reduced to pieces

and the contents evidently removed. Only nests 1 and 3 were deserted; the sitting hen was flushed from all the others. Except in the case of nest 3, none of the trees appeared to have been climbed previously that season, and there was no evidence of other causes of breakage, such as egg-eating by Crows (*Corvus corone*), Jays (*Garrulus glandarius*) or squirrels (*Sciurus* spp.).

Breakages were more frequent during the latter half of the observation period, as was found for the Peregrine. It was during this time that a decline in the numbers of breeding Sparrowhawks, or at least the desertion of several once-regular territories, became apparent in the Carlisle district of Cumberland. Such desertions are difficult to prove and they may be unconnected with the breakage of eggs, but the territories of nests 2 and 3 appear to have been without breeding birds during the last few years. Moreover, two more pairs in the Fingland area and one near Great Orton do not seem to have nested since about 1954. In the same Solway district of Cumberland a wood at Kirkandrews-on-Eden which held two nesting pairs from 1943 to 1945 certainly had only pair from 1946 onwards, and during the last few years I have been unable to locate even one nest. Another Kirkandrews wood held a nest in 1949 and evidently during earlier years, but has been deserted since at least 1952. There are no gamekeepers in this district to account for the decline.

Mr. E. Blezard tells me that in Cumberland he has several times noted similar occurrences in the Sparrowhawk, with the remains of eggs either in the nest or on the ground below.

I have not found broken eggs in the nests of Buzzard (*Buteo buteo*), Kestrel (*Falco tinnunculus*) or Merlin (*F. columbarius*), but there is one other raptor for which it is possible to give instances of similar happenings and that is the Golden Eagle (*Aquila chrysaetos*). Two eyries in Sutherland, one on 15th April 1952 and the other on 16th May 1957, contained the comminuted fragments of the season's eggs. In each case both the old eagles were about and there were no signs of human disturbance. The keeper at one eyrie was confident that no one had been to the place before during that season.

Dr. J. D. Lockie has kindly supplied me with notes on two other Golden Eagle eyries which contained broken eggs. At the first of these, in Perthshire in 1941, there were two eggs on 21st March and the old bird was incubating closely. On 20th April the nest contained one egg and the remains of the other; the adult was about and anxious. Then on 16th June the nest was found to be empty except for the remains of the second egg, and the old eagles were absent. There is just a possibility in this case that the first breakage could have been caused by falling icicles. Dr. Lockie's second record was in Wester Ross in 1957: on 3rd May there were two eggs and the adult was

incubating, but in July the nest contained nothing except the broken remains of both eggs, although one of the eagles was still in the area and interested in the eyrie.

On the Isle of Rhum, Inner Hebrides, Mr. P. Wormell found yet another instance of this happening at a Golden Eagle's eyrie and I am grateful to him for giving me details. On 15th April 1958 the nest contained two eggs and the adult was incubating, but on 4th June, though both adults were still in the area, nothing remained but small fragments of eggshell. Three pairs of Golden Eagles formerly nested on Rhum, but during the past three years breeding success has been low. No young were known to have been reared in 1958 and only one or two in 1959. This coincides with a reduction in the potential food supply, due to the removal of the large sheep stock, but there are no records of breeding success available for the years immediately before to give this real significance.

Since the publication of my article on the Peregrine (*Falco peregrinus*), referred to above, I have noted at least one further case of egg-breakage in that species. On 20th April 1959 I visited an eyrie in Scotland and found one incubated egg and the broken remains of others. Another eyrie, also in Scotland, contained only one evidently incubated egg on 26th April 1959, but I did not reach the nest to examine it for remains of others. There has been no apparent decline in the breeding population of the Peregrine in the areas I have studied.

D. A. RATCLIFFE

Voice of the Jack Snipe.—In *The Handbook* (4: 206) the only note ascribed to the Jack Snipe (*Lymnocyptes minimus*), on the authority of T. A. Coward, is "a low, weak, but perfectly distinct call" occasionally uttered. In amplification of this my experiences may be of interest. From all the Jack Snipe I have come across I have only twice heard a call, on 18th November 1948 and 25th November 1959, each time in Co. Mayo. On both occasions it was a subdued version of the *scaap* of the Snipe (*Capella gallinago*), much lower and very abbreviated, and uttered once only.

ROBERT F. RUTTLEDGE

Bee-eaters diving into water.—In the early part of 1959 two European Bee-eaters (*Merops apiaster*) spent several weeks in the vicinity of a small dam near Bulawayo in Southern Rhodesia. On 7th March I was surprised to notice them hovering above the surface of the water and then diving in from a height of about six feet in the manner of a tern (*Sterna* sp.) or Pied Kingfisher (*Ceryle rudis*). I could not see what they were catching, but they were doing this consistently and at times were almost completely submerged. On that day there were quite a few migrant European Bee-eaters in the area, but they did

not join these two and were feeding normally over the grassland. Later the two birds were back in their usual area and were not seen behaving in this way again.

A. J. TREE

[We showed this note to Mr. J. J. Swift who has made a study of Bee-eaters in the Camargue, France. He has commented as follows: "I think that it would be unwise to assume without further evidence that the birds were in fact feeding, but their behaviour is of some interest and I know of only two similar records. Two of the young Bee-eaters reared in Sussex in 1955 were observed making shallow dives into a fresh-water pool (submerging only the head and neck) and once it seemed that one emerged with a white larva-like object in its bill (see K. E. I. Barham, P. J. Conder and I. J. Ferguson-Lees, 'Bee-eaters nesting in Britain, 1955', *Bird Notes*, 27: 40). I also have an observation by M. Richards of a Bee-eater 'fishing' in the Rixxanese in S. Corsica in a manner almost exactly the same as that described by Mr. Tree; nothing could be seen in the bird's bill. I have never observed such behaviour in the Camargue, but most of the birds that I watched had only brackish water in the vicinity and this might make a difference. Bee-eaters drink fresh water fairly often, hovering or dipping down to the surface. It seems that they occasionally bathe by immersing themselves completely in water, and it is not impossible that the observations above refer to birds bathing, although this would seem unlikely from the fact that they continued to dive a number of times."—EDS.]

Nuthatch seeming to feign dead after fight.—At 9 a.m. on 16th October 1959 two Nuthatches (*Sitta europaea*) that had come for nuts in a hanging basket at my home at Claygate, Surrey, suddenly started fighting on the lawn underneath. After two or three jumping skirmishes accompanied by a fierce squeaking, one of them fell on to its back with its claws and beak pointing upward and seemed to be feigning dead. The other watched, still, for a few seconds, then moved sideways about a foot. As this bird moved, the vanquished one "bicycle-pedalled" with its feet, but stopped when the victor stopped and again seemed to be feigning dead. The bicycle-pedalling was repeated once more, then the victor flew off. The vanquished "rose from the dead" very promptly indeed and made for the nut basket. The general effect was of an accomplished and polished performance.

R. G. C. JENKINS

Robins feeding nestling Blackbirds.—During March 1959 a Robin (*Erithacus rubecula*) made repeated attempts to build a nest inside our first-floor flat at Reigate, Surrey. We finally allowed it to do so on

an electric fire attached to the wall above the window of the kitchen. Three eggs were laid and then, over a week later, two more; two eggs hatched. The hen was cautious about coming in to feed the young when we were in the kitchen (it was often necessary for us to hide) and the cock was extremely shy.

Shortly after the Robins hatched, a brood of Blackbirds (*Turdus merula*) also hatched in a nest built against the outside wall of the kitchen just below the window. We were soon struck by the long intervals between the visits of the Robins to their nest and we discovered that the cock was feeding the young Blackbirds; to the best of our knowledge he never fed his own offspring. At the same time, if we frightened the hen Robin she would also sometimes dispose of the food she was carrying at the Blackbirds' nest. As a result there was at least one period of several hours when the young Robins were not visited (so we fed them on chopped earthworms).

The hen Robin's normal route to her own nest was very close to the Blackbirds' and at times she appeared to be bewildered. On one occasion she stood on the edge of the Blackbirds' nest with food and then, getting no response from the young, flew up to feed her own. Both parent Blackbirds accepted the presence of a Robin at the nest and on at least two occasions an adult Blackbird and Robin stood side by side. The male Robin carried out much of the sanitation at the nest of the larger birds.

The two young Robins and all five Blackbirds fledged, but it was not possible to follow the association afterwards.

RAYMOND and JOY CORDERO

Unusual roosting site of Pied Wagtails.—On 3rd September 1959 a large roost of Pied Wagtails (*Motacilla alba*) was found inside greenhouses used for growing tomatoes at Milton near Cambridge. The birds entered through the open windows in the roof and roosted on the guiding wires and on the tomato plants themselves at a height of eight to fourteen feet. The owners of the greenhouses said that the birds were usually present in large numbers from July until early November, and again in smaller numbers in the spring. The practice apparently first began about five years ago and much damage is caused by the birds' fouling the plants, particularly in the spring when these are small, and also the fruit.

During the seven weeks following our first visit to the roost, six excursions were made there at night and 453 Pied Wagtails were ringed. Of these, 244 were adult and 209 first-winter, but of the last 83, caught on 22nd and 24th October, 39 were adult (21 males and 18 females) and 44 were first-winter (25 males and 19 females). There were also 21 retraps of birds ringed at another Cambridge roost in the previous

two winters. It was estimated that between 600 and 800 wagtails were present during September 1959, and after that numbers gradually declined to 50 at the end of October, when the roost finally dispersed because of the removal of the plants and the closing of the windows. These peak figures are supported by the numbers of retraps: for example, on 27th September, when 268 birds had already been ringed, only 25% of a catch of 186 had rings on.

It is interesting to note that when the wagtails abandon the greenhouse roost they disperse to several smaller roosts in more typical reed-bed sites and it was at one of these that the birds from the previous two winters had been ringed. Similarly, a large proportion of those caught in November 1959 at this roost, which is 4 miles S.E. of the greenhouses, had been ringed in the greenhouses in September and October. Some indication of the size of the area from which the large September roost draws its members may be given by the fact that one wagtail was recovered seven miles away the day after it was ringed. In addition, towards the end of 1959, wagtails with rings on were reported following the plough on farms as far as nine miles away from Milton. Evidence that even passage birds join the roost inside the greenhouses is provided by one ringed on 7th September 1959 and recovered on 26th October in southern Spain.

Finally, seven of the birds ringed at the reed-bed roost in the winter of 1957-58 were found dead together in the Milton greenhouses during cold weather on 16th February 1958, at the same time as many unringed ones. They had apparently entered for warmth during severe weather and had either been unable to get out or been too weak to do so. This use of the greenhouses at that time of the year is apparently quite exceptional.

C. D. T. MINTON

Reviews

The Waterfowl of the World. By Jean Delacour. Illustrated by Peter Scott. Vol. 3. Country Life, London, 1959. 270 pages; 20 colour plates; 46 distribution maps. £6 6s.

With this third volume *The Waterfowl of the World* becomes a completed work. It is open to plenty of criticisms, but when these have been made the fact remains that it has few rivals in surveying a major group of birds on a world scale on the basis of personal knowledge in so many lands. Although the colour reproduction can be rated as no higher than adequate, the illustrations are probably unique in comprehensiveness both as regards species and subspecies and in adult and juvenile plumages. Moreover, the pictures are arranged and presented with exceptional skill and are painted with all the talent which

is naturally expected of the world's leading artist in this field. The systematics are authoritative and up-to-date, and the avicultural information is not only thorough but based on unrivalled first-hand experience. The descriptions are sufficient, if somewhat brief, and the distribution sections are serviceable although it is not easy to construe the maps in relation to the text.

The present volume deals with five somewhat arbitrary "tribes" of this puzzling and close-knit group—the eiders; the pochards; the perching ducks (including Mandarin, Comb and Muscovy Ducks, and Spur-winged Goose); the scoters, goldeneyes and mergansers; and finally the stifftails. One species, the Labrador Duck, is definitely extinct and another, the Auckland Island Merganser, is feared to be. The Brazilian Merganser, whose continued existence was for some time in doubt, is extensively described on the basis of studies made since its rediscovery in 1948. The Carolina or Wood Duck of North America has revived excellently under strict protection, but it is still questionable whether the Mandarin Duck can survive in its Asiatic haunts and therefore the recently acclimatised stock in Surrey and Berkshire is of peculiar importance.

The present volume is of special interest to readers in Britain for its accounts of such rare stragglers to this country as the Ring-necked Duck (included with the Tufted Duck among "broad-billed pochards") and the King and Steller's Eiders, Surf Scoter, Buffelhead, Hooded Merganser and Harlequin.

It will no doubt be a long time before the ornithologists of the world are provided with an equivalent survey of any other cosmopolitan group, and they must be grateful for a great labour of love worthily conceived and satisfactorily completed.

E.M.N.

British Birds of Prey. By W. Kenneth Richmond. Lutterworth, London, 1959. 184 pages; 34 photographic plates. 21s.

This book, illustrated by photographs taken mainly by the author, opens with two general chapters which are then followed by separate ones on the Golden Eagle, Peregrine, Kestrel, Hobby, Merlin, Common Buzzard, Hen Harrier, Montagu's Harrier, Marsh Harrier, Goshawk, Sparrowhawk, Kite, Honey Buzzard and Osprey. It does not contain an index or a bibliography, and a number of often dogmatic pronouncements are so drafted as to make it impossible to distinguish statements based on the author's own fairly considerable experience from those simply rehashed, usually without acknowledgement, from other published sources. For example, the comprehensive review of the status and numbers of birds of prey published in *British Birds* in 1957 (50: 129-155) is in places even quoted verbatim without

the reader being given any definite clue to its existence. The author can have only himself to blame if critical readers conclude that he has no first-hand contribution to make to the problem of national trends in numbers, with which his book is so largely concerned. Nor can he object if they assume that, where his estimates differ from those of others, they are arrived at mainly by the bewildering processes of often contradictory and highly subjective argument which the author presents in half-digested form before suddenly plumping for one arbitrary conclusion or another.

Mingled uneasily with this stream of controversial generalisation, and with a number of hardly relevant rhetorical interludes, there is fortunately a considerable amount of first-hand observation. This is vividly described and will make many readers all the more regretful that the author's initial argument with himself about his aims (which he most candidly describes in his Introduction) should have ended in such a muddle. While he has produced a few new points and stimulating questions, this effort cannot be judged a success. It can only be hoped that, if he ever repeats the experience that in "putting pen to paper, I found myself in two minds", he will firmly decide what he is about before proceeding one word further. Meanwhile he may console himself that he is by no means the first to fail in this way, although few have been so open in admitting it.

In concluding his final essay on the Osprey, he writes:

"Given a sporting chance, there is no doubt that the bird would return to more than one of the remoter lochs. It should not be beyond the wit of man—or beyond the means already at the disposal of the Nature Conservancy, the Royal Society for the Protection of Birds, and the Scottish Ornithologists' Club—to provide that chance."

In view of events since this book went to press we may perhaps be forgiven for commenting, "It shouldn't and it wasn't". E.M.N.

Letters

The spread of the Eider in America

Sirs,—The increase and spread of the Eider (*Somateria mollissima*) in the British Isles, recently outlined by J. H. Taverner (*Brit. Birds*, 52: 245-258), is concurrent with a similar or greater increase in both summer and winter on the New England coast of America. In 1904, according to R. S. Palmer (1949, *Maine Birds*, p. 120), "only four adults at Old Man Island . . . and a few elsewhere were known of in the state. In the summer of 1931, Norton and Allen found 25 broods and 27 nests along the eastern coast, and by 1943 Gross had found nests

on 31 islands and estimated that the nesting population (of Maine) probably exceeded 2,000 pairs." Since then the increase in Penobscot Bay has been phenomenal. For instance, in 1943 A. O. Gross found 15 nests on No Man's Land in the Matinicus Archipelago which lies off this bay (*Wilson Bull.*, 56: 24). Fourteen years later, on 2nd July 1957, I found over 100 nests on that island. I believe that the increase elsewhere in the Penobscot Bay area has been proportional. At the same time at Muscongus Bay, which is much more thoroughly covered than Penobscot Bay, Joseph M. Cadbury reports that the summering population has increased from 800-1,000 ten years ago to something between 6,000 and 10,000 in 1959.

The winter increase has been even greater in proportion. L. Griscom and D. P. Snyder (1955, *Birds of Massachusetts*, p. 59) reported that the main wintering flock off Monomay on Cape Cod had risen "from 15,000 in 1940 to an estimated half-million in 1951, decreasing after the tanker disasters of February 1952."

FREDERICK V. HEBARD

Palearctic waders in eastern North America

Sirs,—I. C. T. Nisbet's recent article (*Brit. Birds*, 52: 205-215) on North American wader migration contained several stimulating ideas. However, one comment on the status of Palarctic waders in America requires, I feel, some qualification. He writes (pp. 211-212) that "the regular occurrence of the Ruff and not infrequent occurrence of the Lapwing, Curlew Sandpiper and European Woodcock in autumn in eastern North America combine with records of the European Curlew (2), Bar-tailed Godwit (3), European Snipe (several) and Jack Snipe to lay emphasis on species with extensive east-west migrations in Europe." On the basis of current data, published and unpublished, only two Palarctic waders can be considered of "not infrequent occurrence" on the Atlantic coast of North America: the Curlew Sandpiper (*Calidris testacea*) and the Ruff (*Philomachus pugnax*).

So far as records of the other mentioned species are concerned, they are so many years apart that the birds seem properly in the "accidental" class, to which they are assigned by the latest A.O.U. Check-list (1957). In over a century of ornithological activity a number of scattered records of Lapwing (*Vanellus vanellus*) and of European Woodcock (*Scolopax rusticola*) have accumulated, but the latest Lapwing record for the United States was almost twenty years ago, and the last *Scolopax* recorded is even older, except for one bird reported from New Jersey in December 1955 and January 1956 (Cruickshank 1956: 95; Potter and Murray 1956: 240). There seem to be five well-authenticated occurrences of the Bar-tailed Godwit (*Limosa lapponica*) in eastern

North America, two specimens from Massachusetts (Griscom and Snyder 1955: 111), one from New York (Muller 1947: 326), and two sight observations from New Jersey (Fables 1955: 35); but only one of these occurrences was within the past ten years—a bird seen in New Jersey in August 1951 by many observers (including the undersigned). The A.O.U. Check-list includes no record of either the European Snipe (*Capella g. gallinago*) or Jack Snipe (*Lymnocyptes minimus*) from eastern United States (and I know of none); a specimen of each is recorded from Labrador and one of the former from Bermuda. If any European waders (besides the Curlew Sandpiper and the Ruff) are of “not infrequent occurrence” in eastern North America, the evidence is yet to be produced. Considering the ardour with which numbers of “birders” in Massachusetts, New York and New Jersey have searched for rarities during migration for the past forty years, such overlooked waders would have to be birds that very closely resemble their American allies or that favour habitats not regularly worked by bird spotters.

The American status of the Curlew Sandpiper and the Ruff appears to have changed in recent years. Formerly even these species were regarded as casual, and the A.O.U. Check-list (1957), being based on the earlier literature, still so characterises them. In New York, on western Long Island (within the New York City limits), a site was discovered in 1947 where one to three Curlew Sandpipers appeared every year during the latter part of May. Even before 1947, this species had been noted with increasing frequency on Long Island (Cruickshank 1942). Within the past fifteen years observations have accumulated in other localities along the Atlantic coast, particularly in spring, much less often in autumn. The Curlew Sandpiper is now regarded as so regular in spring near New York City (Bull 1958), that, although elsewhere considered a rarity, it is no longer emphasized in bold-faced type when reported from this area in *Audubon Field Notes* (1958: 468). The Ruff, for the past ten years, has probably been recorded annually from somewhere in the Atlantic states between Massachusetts and Florida. As it favours fresh water it is more often seen away from the sea-coast than is the Curlew Sandpiper. The recent records are mainly in the spring. Curiously, there are a number of records (Griscom and Snyder 1955) of both species between late June and early August, and a few for the Curlew Sandpiper in winter (Cruickshank 1942; Fables 1955). The greater frequency of spring over autumn reports is contrary to what occurs with other rare waders (except perhaps for southern vagrants). Hence the plausible explanation that these two species may be more readily overlooked in their inconspicuous autumnal dress seems an inadequate explanation if these birds were really more numerous in the United States in autumn—

as one would expect if they were drifted over directly from Europe across the northern Atlantic.

The assumption is reasonable that Palearctic waders noted in America during the spring migration probably crossed the Atlantic during the previous autumn (or that of a prior year) and are returning northward with native waders. Nisbet makes the further stimulating suggestion (p. 213) that the earlier crossing may have been "perhaps between South America and Africa". This is an idea worth developing. I would suggest that a crossing of the *tropical* Atlantic may account not only for Palearctic spring migrants but also for many of those observed in north-eastern North America in late summer and autumn. The prevailing autumnal wind pattern across the northern Atlantic is strongly from west to east, i.e., adverse to a crossing directly from Europe to North America. Over the tropical Atlantic a very different situation prevails. South of the Equator (at times moving as much as ten degrees northward) is the zone of south-east trade winds, which "blow briskly and regularly . . . from June to January" (Murphy 1936: 42, 56). North of the Equator the tropical Atlantic between July and October is the breeding ground of great cyclones, which often attain hurricane velocity. A common course of these tropical cyclones is from near the coast of Africa westwards towards the West Indies, then often curving northward and north-eastward along or near the North American coast (Murphy 1936: 51-59). Murphy (1936: 56) figures the courses of a number of these storms which carried petrels from the eastern tropical Atlantic to north-eastern United States and Canada.

These tropical air movements occur during the period when Palearctic birds are migrating southward to Africa. The eastern islands of the West Indies are, of course, most likely to catch such drifted Palearctic waifs, but those cyclones that continue northward may deposit birds not only in the eastern United States, but also in Bermuda, Newfoundland or southern Labrador. Newfoundland and Labrador extend well east toward Europe, so Palearctic birds traversing the northern Atlantic are also most likely to occur there, as happened when numbers of Lapwings were carried over from Britain by an easterly winter storm in December 1927 (Witherby, 1928). But it should be noted that this section of eastern Canada is also in the path of some of the tropical storms, which in their later stages curve north-eastward. Newfoundland has in recent years reported a number of southern vagrants, including the Old World Little Egret (*Egretta garzetta*)—recorded elsewhere in the Western Hemisphere only from Trinidad.

Unequivocal as to the importance of tropical storms in transporting Palearctic migrants to American shores is the remarkable number of species collected on Barbados, easternmost of the Lesser Antilles

(about 13° N., 60° W.), and much nearer to Africa than to Europe. On this small member of the Windward Islands group, endowed with few bird students, Bond reports (1956, 1959) the collection of the following Palearctic species: Ringed Plover (*Charadrius b. hiaticula*) (September, only American record south of Baffin Island), Lapwing (once), Curlew Sandpiper (once, autumn), Ruff (many times, August to October), Wood Sandpiper (*Tringa glareola*) (only American record east of Alaska), Black-headed Gull (*Larus ridibundus*) (November), European Cuckoo (*Cuculus canorus*) (autumn, only American record), Alpine Swift (*Apus melba*) (September 1955, only American record). The last bird was attributed by the collector to a specific hurricane (Bond 1959, p. 11).

Of the waders, both Ruff and Curlew Sandpiper have been recorded from at least two other Lesser Antilles, and on the continent of South America, and the Curlew Sandpiper (recently) in Louisiana and Texas on the Gulf of Mexico. In the New World these two species associate with American waders of similar habitat. If the waders they join are still migrating southward, they will presumably accompany them, and return with them in the spring through North America. Once in the New World, Palearctic waders, so long as they survive, probably continue to migrate year after year with their American relatives. Birds carried north by late autumnal storms, after American waders have ceased migrating at such latitudes, are more likely to remain or to wander locally in search of suitable habitat. This may account for the occasional winter records of Palearctic waders when there have been no easterly storms.

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[In connection with the interesting list of European species mentioned by Mr. Eisenmann as having been recorded on Barbados, it may be useful to draw attention to the Spotted Crane (*Porzana porzana*) which was caught alive and killed in October 1956 on the French part of St. Martin in the Lesser Antilles (K. H. Voous, *Ardea*, 45: 89-90). This is the only record of this species in America.—Eds.]

Requests for information

Irruption of tits in 1959.—There is evidence that another irruption of tits (*Parus* spp.) took place during the autumn of 1959, though clearly on a much smaller scale than in 1957. Information is required on any increases or movements of tits (including the numbers involved and, if possible, times and directions) and also on outbreaks of attacks on milk-bottles, paper or putty. The report on the 1957-58 irruption, the second part of which is published in this issue on pages 99-117, suggests that inland movements were often overlooked or not reported, but such records are of special interest. We assume that most relevant observations for 1959 will by now have been sent to the editors of the appropriate county reports, but in the cases of areas without a local report, or where the observations are of a special nature, we should be most grateful if readers would get in touch direct with Stanley Cramp, 9 Queen Court, London, W.C.1.

Grey Wagtail movements.—Full details of coastal and inland movements of Grey Wagtails (*Motacilla cinerea*) are required for an intended analysis of the migrations of this species. Special attention is being given to the years 1956-60, but all observations are of interest and will be duly acknowledged in the event of publication. Details should be sent to J. T. R. Sharrock, Ecology Research Laboratory, Botany Department, University of Southampton.

Field investigations of the B.T.O.

Lapwing habitats.—This spring a new enquiry is to be launched by the British Trust for Ornithology into the habitat preferences of the Lapwing (*Vanellus vanellus*). This is designed as a follow-up to the previous Trust enquiry on this subject, which was organised in 1937 by E. M. Nicholson (*Brit. Birds*, 32: 170-191, 207-229, 255-271). It aims to find out whether the Lapwing's habitat preferences have altered in the last 20 years and, if so, why. It also seeks information on changes in status, flocking behaviour, etc. Forms and further details may be obtained from the organiser, M. D. Lister, 40 Nork Way, Banstead, Surrey.

Recent reports and news

By Kenneth Williamson and I. J. Ferguson-Lees

The items here are largely unchecked reports, and must not be regarded as authenticated records. They are selected, on the present writers' judgement alone, from sources generally found to be reliable. Observers' names are usually omitted for reasons of space and in case a report is subsequently rejected, and none of the items will be mentioned in our annual Index. Readers are asked to submit anything of interest as quickly as possible.

This summary is largely confined to November and December 1959. Most of the rarer birds in that period have already been mentioned (*Brit. Birds*, 52: 436-437, 439-440; 53: 41-48, 96) and we are now merely attempting to gather together some loose threads remaining from the last weeks of a very interesting autumn departure and winter arrival.

WAXWINGS

The now perennial subject of Waxwings (*Bombycilla garrulus*) must be left to the analysis being prepared by R. K. Cornwallis. We should be grateful if all records could be sent to him at Bleasby Grange, Legsby, Market Rasen, Lincolnshire. Here, to follow what we wrote in January (p. 47), it will suffice to say that, though the flocks were certainly very large in November, particularly in Scotland and on the east coast, many of them did not stay long, presumably because of the berry shortage. Only comparatively small numbers remained in the north-east after the beginning of December and there was a further exodus in early January. There were little groups in Cumberland, Westmorland and Lancashire from November to early January and odd records during this period in inland counties further south, such as Derby and Nottingham. Reports since then, however, have dropped away and there have been few from the extreme south of England west of Kent. Nevertheless, it is interesting to note in conclusion that Waxwings were seen travelling westwards in some areas during the remarkable hard-weather movement in mid-January (peak 13th-14th) which we hope to describe in another issue. For example, about 45 flew inland at Titchfield Haven (Hampshire) at this time.

LITTLE AUKS AND INLAND PETRELS

Little Auks (*Plantula alle*) appeared off the Norfolk coast during a gale on 26th-27th October, and on the days which followed many were seen off Hartlepool (Co. Durham)—including about 70 on the 29th, over 120 on the 30th, 21 on the 31st and 88 on 1st November. Most of these were travelling north and there was a similar northward movement past Spurn Head (Yorkshire) on 31st October in a return of anticyclonic weather: about 60 were recorded then and a dozen next day. Reports came from various other parts of the coasts of Yorkshire, Co. Durham and Northumberland and the peak movement seems to have taken place in that area, though smaller numbers were noted as far north and south as Midlothian and East Anglia (and there were odd ones on the south coast, chiefly Sussex, during 29th October-1st November). At Monks' House (Northumberland) 20 were feeding from a travelling shoal of sand-eels.

A number of Little Auks were found stranded at the turn of the month. Some were inland, but what was in no sense a "wreck" appears to have been due to the coincidence of the movement with the biggest diurnal Passerine immigration of the autumn. It seems likely that those which came to grief were "caught up" in low-flying flocks of immigrant Starlings (*Sturnus vulgaris*)—and, indeed, Little Auks were actually seen to fly inland with these strange companions at both Spurn and Hornsea (Yorkshire), the latter being another place where the northward movement was

striking on 31st October (51) and 1st November (47). Several dead or stranded birds were found in Norfolk and Lincolnshire between 31st October and 4th November. Much further inland, at Risley (Derbyshire), one was picked up alive on 2nd November. The only reports received from the west around this period concerned single birds at Oldham (Lancashire) on 16th October, Wirral (Cheshire) on 29th October and Kentmere (Lancashire) on 5th November, though one was picked up dead at Crosthwaite (Westmorland) at the end of December.

Perhaps similarly "caught up" by other birds, a few petrels were also recorded inland in early November. Two or three Storm Petrels (*Hydrobates pelagicus*) were seen flying up the Thames with Passerines at Cliffe (Kent) on 1st November, on which day one Storm Petrel and a Little Auk were found on Staines Reservoir (Middlesex) and a Leach's Petrel (*Oceanodroma leucorhoa*) on Queen Mary Reservoir (Middlesex).

There was evidence of a reverse passage of Little Auks off north-east England in mid-November and again at the end of the month. At Hartlepool, for example, four were seen moving south on the 14th, 11 on the 15th and four on the 29th. More records from the south coast resulted: single birds at Selsey (Sussex) on the 14th, at Poole (Dorset) on the 15th, at Swingfield (Kent) on the 16th, at Brighton (Sussex) on the 18th, at St. Catherine's (Isle of Wight) on the 21st and at Southwick (Sussex) from the 22nd until 5th December. In December there were three at Selsey on the 6th in a south-south-westerly gale, and single birds in the Isle of Wight at Yarmouth (9th), Newton (28th) and Freshwater Bay (30th).

LITTLE GULLS AND PHALAROPES

Late October saw up to 30 Little Gulls (*Larus minutus*) daily in the Cley/Blakeney area (Norfolk) and an equally remarkable total at Hartlepool (Co. Durham) where 16 on the 27th-28th increased to 35 on the 29th when an anticyclonic ridge superseded the depression. Subsequently there were a number along the south coast from Sheppey (Kent) to Swanage and Portland Bill (Dorset). There would be little point in detailing all the records, but among the most interesting were 11-14 at Hartlepool on 14th November and 4 there on the 15th; 13 flying east-to-west past Selsey Bill (Sussex) during a S.S.W. gale on 6th December; 20 at Portland on the 8th; small feeding parties totalling 15 birds at Sheppey on the 12th; and an adult with a marked rosy tinge on the underparts, plus 3 immatures, off the Filey-Bridlington coast of Yorkshire on the 13th. Inland appearances included two young birds at King George V Reservoir (Essex) on 14th-15th November and an adult at Staines (Middlesex) the same weekend; an adult and an immature at the first locality from the 21st to the end of the month; and an adult at Ravensthorpe Reservoir (Northamptonshire) on 12th December.

An adult Sabine's Gull (*Xema sabini*) flew east past Selsey Bill (Sussex) on 2nd November and Grey Phalaropes (*Phalaropus fulicarius*) continued to be reported during November. It will be remembered that considerable numbers of the latter, including an incredible concentration at St. Agnes (Isles of Scilly), occurred during October (*Brit. Birds*, 52: 438-439) and there was a trickle of records during November. These were mostly single birds, in Kent, Sussex, Somerset and Glamorgan, but two were recorded together at Great Saltec (Co. Wexford) on the 12th.

BEWICK'S SWANS AND VARIOUS DUCKS

There would appear to have been at least two influxes of Bewick's Swans (*Cygnus columbianus bewickii*) before the turn of the year, one at the end of October and the other in mid-December, both rather earlier than has been usual in recent years (see *Brit. Birds*, 52: 393-416). Late October/early November reports from Berkshire,

Leicestershire (29 adults and 17 immatures) and Cheshire have already been mentioned (*Brit. Birds*, 52: 437); and that the date of the first influx was 31st October is supported by an observation of 11 coming in off the sea at Minsmere (Suffolk) that afternoon, followed by three next day. On 2nd November one was seen at Folkestone (Kent) and on the 4th one flew over Regent's Park (London). There were two at Woodhouse Mill (Yorkshire) on the 8th, and two adults and four young at Durlough Reservoir (Somerset) on the 15th-16th. Ravensthorpe Reservoir (Northamptonshire) had two adults and two young from 21st November and these were joined by a further ten adults and six immatures on 12th December. This seemed to represent a second influx as on the 13th there were 8 at Chapel St. Leonards (Lincolnshire) and four flew over the Nene Washes, while 27 (17 adults and 10 young) were seen in the Hams Hall/Shustoke area (Warwickshire). Two days earlier, too, five were found at Bittell (Worcestershire), of which two remained to at least the 15th. Now birds began to be recorded more on the Ouse Washes and the occurrence of four adults and six young near Hereford on 26th December should perhaps also be mentioned. In the second week of January, and more particularly in the middle of the month, fair-sized herds were recorded from a number of counties.

There was a scattering of Red-crested Pochards (*Netta rufina*) in Northamptonshire, Oxfordshire, Gloucestershire and Glamorgan between late October and the end of the year, and a number of inland records of sea-ducks. These included several Long-tailed Ducks (*Clangula hyemalis*) and two interesting instances of Eiders (*Somateria mollissima*)—an immature male at Ravensthorpe Reservoir (Northamptonshire) on 21st November and an immature male and a female at Cannock Reservoir (Staffordshire) from 12th December to at least 10th January. However, the duck most widely commented on was the Goosander (*Mergus merganser*). Unfortunately we have not enough figures to make a complete picture or even to make it worth detailing the larger totals and more unusual records. However, it does seem clear that there was a considerable influx in the Midlands and the Home Counties during 9th-12th December, and again towards the end of the month and in mid-January. Surrey, Middlesex, Hertfordshire and from there up to Staffordshire and Leicestershire provide the limits of the counties most affected. There were big numbers on some of the London reservoirs—for example, 150 on Queen Mary Reservoir (Middlesex) on 9th December and over 235 there by the 28th—but such totals do occur there from time to time and the influx is shown up more clearly by records like the 42 and 49 at Wilstone Reservoir, Tring (Hertfordshire), on 13th December and 10th January respectively. These figures are quite exceptional for Tring. In the West Midlands the species was described as widespread in December.

PIGEON MOVEMENTS

An extraordinary feature of the late autumn was the immensity of Woodpigeon (*Columba palumbus*) and Stock Dove (*C. oenas*) movement, and the observations—particularly from the Channel coast—point to most of this being emigration. However, the first report, from Folkestone (Kent), was of 10 coming in off the sea. A few were moving over Leatherhead (Surrey) on 31st October, and 5 left Portland Bill (Dorset) flying W.S.W.; but on this day the only large party was of 400 going south at St. Agnes (Isles of Scilly). In calm anticyclonic weather on 1st November there was westward passage over Boxley (Kent) and about 110 flew over Leatherhead from the N.N.W. At Selsey Bill (Sussex) there was a certain amount of coasting, both east and west, and at 07.15 hours a flock of 100 flew out to sea to the south-west, though some may have returned as 30 passed in the opposite direction shortly afterwards. Large numbers of Woodpigeons were reported to be in Berwickshire at this time.

Activity was again marked with a return of anticyclonic conditions in the St. George's Channel region on 4th November, especially at St. Agnes where Stock Doves were also concerned, a flock of 200 flying north-north-east. Great Saltee (Co. Wexford), after a single tired bird on the 3rd, had 500 passing from south to north on the 4th, with fewer next day and 20 on the 6th. There were said to be very many pigeons at this time in the southern part of Ireland. On the 5th 8,400 were counted passing north at Titchfield Haven (Hampshire); there that was the peak of a movement which started at the beginning of the month and lasted until the 15th. On the 7th at Selsey up to 600 were flying in from the sea and out from the land between 07.15 and 07.50 hours, and a vast flock of about 2,500 came from the south and flew inland at 08.10 hours; at this time there was a high over southern England. Next day there was small movement to west and south at Leatherhead, while at Portland, 65 Stock Doves in parties of up to 7 were flying out to sea and returning, and one party of 18 was seen to come in high. There was small-scale passage at Great Saltee on the 10th, and large flocks were seen flying high at Folkestone on the 12th. On the latter day, too, unusual movement of both species was noted at Frocester (Gloucestershire) in the hour following 07.15, with 238 moving south and 92 south-south-east in 14 flocks, the largest containing 80 birds.

The Channel coast again saw much activity on 15th November, with considerable emigration from Portland, and 850 Woodpigeons flying from east to west off Selsey between 06.50 and 11.00 hours. At Portland 110 of nearly 900 Woodpigeons left south and 116 to the S.S.W., while 7 of 100 Stock Doves departed south and 10 S.S.W., many more birds flying out but subsequently returning. These movements took place during the clearance of a vigorous depression which affected the country on the 13th-14th. There were 200 birds coasting north over Folkestone on the 17th.

There was tremendous southwards migration at Spurn Head (Yorkshire) on the 20th-21st, and even larger masses moving south-east in the Thanet region of Kent, while on the second of these days activity spread to Portland and Selsey, and a little north-east passage was observed at Frocester. At Spurn more than 3,100 Woodpigeons were counted on the 21st, with a few Stock Doves and "hundreds" of feral pigeons of Rock Dove type (*C. livia*), again in improving weather after the passing of an active depression. It is difficult to know where so many feral doves might have originated, unless they came from north-east Scotland where this is a common bird. At Thanet the passage on the 20th included 6,000 birds in one quarter-hour spell, and it was estimated that more than 20,000 passed on the following morning. There were 70 Woodpigeons at Portland on the 21st (with 27 Stock Doves on the 22nd and 14 next day), and 200 flew out to sea at Selsey Bill at 07.45 hours, a few also coasting from west to east on both days.

On the 28th passage was again strong at Spurn and included over 1,410 Woodpigeons, while an immense exodus of both species took place at Portland Bill. A ridge of the Azores high extended to the English Channel bringing a light west-south-west wind. Over 15,000 birds, estimated at two-thirds Woodpigeons and one-third Stock Doves, went over Portland in three great flocks to south-west and S.S.W. between 07.45 and 08.15 hours. This seems to have been the last large-scale movement, but 260 or more went south at Spurn on 5th December, and at Selsey Bill on the 13th, in typical col weather, 22 were seen to go out to sea to the south and then return early on 13th December.

R. K. Murton, of the Ministry of Agriculture, Fisheries & Food, is collecting data on the Woodpigeon movements during this period and we should be grateful if any observations which suggest migration could be sent to him at Infestation Control Field Research Station, Tanglely Place, Worplesdon, Guildford, Surrey.

Notice to Contributors

British Birds publishes material dealing with original observations on the birds of Britain and western Europe, or, where appropriate, on birds of this area as observed in other parts of their range. Except for records of rarities, papers and notes are normally accepted only on condition that the material is not being offered to any other journal. Photographs (glossy prints showing good contrast) and sketches are welcomed. Proofs of all contributions accepted are sent to authors before publication. After publication 20 separates of papers are sent free to authors; additional copies, for which a charge is made, can be provided if ordered when the proofs are returned.

Contributors are asked to observe the following points, attention to which saves the waste of much editorial time on trivial alterations:

1. Papers should be typewritten with double spacing, and on one side of the sheet only. Shorter contributions, if not typed, must be clearly written and with similar spacing. Failure to help in this way may result in delays to publication.

2. Notes should be worded as concisely as possible, and drawn up in the form in which they will be printed, with signature in block capitals and the writer's address clearly written on the same sheet. If more than one note is submitted, each should be on a separate sheet, with signature and address repeated. In the case of rarity records, any supporting description which is too detailed for publication should be attached separately.

3. Certain conventions of style and layout are essential to preserve the uniformity of any publication. Authors of papers in particular, especially of those containing systematic lists, reference lists, tables, etc., should consult the ones in this issue as a guide to general presentation. English names of species should have capital initials for each word, except after a hyphen (e.g. Willow Warbler, Black-tailed Godwit), but group terms should not (e.g. warblers, godwits). English names are those used in *The Handbook of British Birds*, with the exception of the changes listed in *British Birds* in January 1953 (46: 2-3). The scientific name of each species should be given (in brackets and underlined) immediately after the first mention of the English name. Sub-specific names should not be used except where they are relevant to the discussion. It is sometimes more convenient to list scientific names in an appendix. Dates should take the form "1st January 1955" and no other, except in tables where they may be abbreviated to "1st Jan.", "Jan. 1st", or even "Jan. 1", whichever most suits the layout of the table concerned. It is particularly requested that authors should pay attention to reference lists, which otherwise cause much unnecessary work. These should take the following form: TUCKER, B. W. (1949): "Species and subspecies: a review for general ornithologists". *Brit. Birds*, 42: 129-134.

WITHERBY, H. F. (1894): *Forest Birds: Their Haunts and Habits*. London. p. 34. Various other conventions concerning references, including their use in the text, should be noted by consulting examples in this issue.

4. Tables should be numbered with Roman numerals, and the title typed above in the style used in this issue. The title and any headings within the table should not be underlined, because this sometimes makes it difficult for the editor to indicate the type to be used. It is most important that the layout of each table should be carefully planned with an eye to its final appearance; above all, it should be borne in mind that tables must either fit into the width of a page, or be designed to fit a whole page lengthways. All tables should be self-explanatory.

5. Figures should be numbered with Arabic numerals, and the captions typed on a separate sheet. All line-drawings should be in Indian ink on good quality drawing paper (not of an absorbent nature) or, where necessary, on graph paper, but this must be light blue or very pale grey. It is best if maps, graphs, etc., are drawn twice the size of the final reproduction (ideally, therefore, for the normal 4" width the original should be 8" wide); sketches of birds, however, should be only slightly larger than the size at which it is intended they should appear. It is always most important to consider how each drawing will fit into the page. The neat insertion of lettering, numbers, arrows, etc., is perhaps the most difficult part of Indian ink drawing and, unless he has had considerable experience of this kind of work, an author should seek the aid of a skilled draughtsman.



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British Birds

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The irruption of tits in autumn 1957

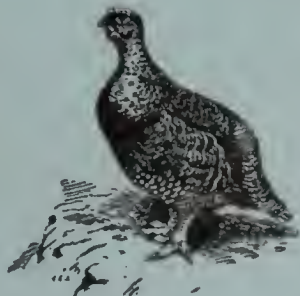
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(Part 3)

Opportunities for co-operation with French ornithologists

Guy Mountfort

Three
Shillings



April
1960

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PURCHASED

British Birds

AN ILLUSTRATED MONTHLY JOURNAL

Edited by

P. A. D. Hollom E. M. Nicholson

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Rose-breasted Grosbeak (*Pheucticus ludovicianus*), male summer and winter, and female. First European record, Co. Antrim, 24th November 1957



American Purple Gallinule (*Porphyrio martinica*), young and adult. First European record, Isles of Scilly, 7th November 1958

Painted by D. M. Reid-Henry for the forthcoming *Popular Handbook of Rarer British Birds* by P. A. D. Hollom

British Birds

VOL. 53 No. 4

APRIL 1960



PURCHASED

American Purple Gallinule in the Isles of Scilly: a bird new to Britain and Europe

A STRANGE BIRD, in size and shape not unlike a Moorhen (*Gallinula chloropus*) though with rather longer legs and feet, was picked up in an exhausted state in the gutter of the High Street, Hugh Town, St. Mary's, Isles of Scilly, late in the evening of 7th November 1958. It was bronze-green above and buff below, with white under tail-coverts; its legs and feet were dull orange-yellow, its iris was light brown, its bill was yellowish-green with reddish-brown at the base, and it had a dull green facial shield.

The finder was Miss Margaret Hughes, on her way to night duty at the telephone exchange. She took the bird with her and it remained at the exchange until the following evening when P. Z. Mackenzie, a local ornithologist, was contacted. He soon realised that it was a species of gallinule not described in the European bird-books. Taking it home, he fed it on earthworms which it ate avidly, but it was in too emaciated a condition and died on the 9th. The corpse was sent to J. L. F. Parslow in London, where it was identified as an immature American Purple Gallinule (*Porphyryla martinica*). The specimen is now preserved at the British Museum (Natural History) (Regd. No. 1958/27/1). Mr. Parslow has supplied the following description and measurements:

Upper-parts: crown and nape rawny-brown; hind-neck partly washed olive, becoming completely olive on lower neck; mantle and long scapulars brownish-olive, becoming olive-brown on lower back; rump rich dark brown with nigger brown tips to the feathers, these forming longitudinal streakings; upper tail-coverts and rectrices brown, rather lighter than rump, with faint olive wash. *Under-parts:* sides of head ashy-buff, becoming rawny-buff on sides of neck and olive-buff on sides of breast; chin and throat off-white; under tail-coverts white; rest of under-parts creamy-buff, lighter on belly, darker and faintly washed olive on breast, and warmer on thighs. *Wings:* primaries black-brown on inner webs and olive-green on outer (except silver-grey narrow outer web to first primary); secondaries olive-brown; coverts mainly brownish-olive.

but bluish-green on primary coverts and some lesser coverts, becoming turquoise on a few feathers near carpal; under wing-coverts slate-grey tinged olive on outer coverts and tipped white; axillaries slate tinged with brown. *Measurements*: wing 173 mm., tail 67 mm., tarsus 60 mm., middle toe (excluding claw) 63 mm. *Wing-formula*: 2nd primary longest, 1st 21 mm. shorter, 3rd 3 mm. shorter, 4th 11 mm. shorter, 5th 20 mm. shorter.

This is the first record of the American Purple Gallinule in Europe and it is also, incidentally, the furthest north it has ever been reported (see notes by Dr. I. C. T. Nisbet, below). It should be added that this bird bears little resemblance to the European Purple Gallinule (*Porphyrio porphyrio*) which belongs to a different genus and is much larger.

Notes on the American Purple Gallinule*

By I. C. T. Nisbet

NO ONE WHO STUDIES the birds of remote oceanic islands can fail to be struck by the curious preponderance among their land-birds of members of the family Rallidae—the rails, crakes and gallinules. Most sizable island groups have endemic species or subspecies, and the family is always well represented in the lists of lost vagrants. Evidently these birds, despite their weak-winged appearance and specialised habits, have great powers of long-distance flight and a great facility for adapting themselves to new environments.

It is thus not surprising that several rails should have succeeded in crossing the Atlantic: the Corncrake (*Crex crex*) has been recorded at least fifteen times in North America (Peterson 1947), the Spotted Crake (*Porzana porzana*) has recently occurred in the Lesser Antilles (Voous 1957), and the Spotted Crake's American representative, the Sora (*P. carolina*) has reached Great Britain on five occasions (Witherby *et al.* 1941). But the latest addition to this list—the American Purple Gallinule (*Porphyrio martinica*) which was found dying in the gutter on St. Mary's in the Isles of Scilly on 7th November 1958 (see pages 145-146)—is somewhat astonishing, for this is a subtropical species which (at least in November) lives almost entirely south of the zone of westerly winds in the Atlantic. The Scilly record was not only the first for the Old World, but was actually the most northerly record of the species!

*These notes on the American Purple Gallinule, and also those on the Rose-breasted Grosbeak which follow the Irish record of that species later in this issue (pages 150-152), have been written by Dr. Nisbet at our special request as an accompaniment to the two paintings by D. M. Reid-Henry now reproduced in colour as plate I.—EDS.

The American Purple Gallinule breeds in the southern and south-eastern United States, north to about latitude 32° in South Carolina, and south through Mexico and the Caribbean to tropical South America. The northern birds are long-distance migrants, and only a handful remains in the United States for the winter, usually in the extreme south of Florida and Texas. This is one of a group of species which migrates directly across the width of the Gulf of Mexico (Stevenson 1957), and its migration is occasionally disrupted there by local cyclonic storms; when these lows move north up the east coast of the United States Purple Gallinules are often brought with them (Griscom and Snyder 1955; Bagg 1957). The species is nowadays recorded almost every year in New England and Bermuda, and has even reached Newfoundland, more than 1,000 miles north of its breeding range (Peters and Burleigh 1951).

For this reason it is tempting to relate the Scilly record to a storm in the Gulf of Mexico a few days earlier, the only one which had brushed the range of the species for some weeks. This storm crossed the Georgia coast during the night of 1st-2nd November, and moved north-east to blow itself out in the Atlantic on the 4th-5th: if the gallinule was carried out to sea with the low pressure centre it must then have crossed a calm area in mid-Atlantic before meeting a moderate south-westerly airflow, in which it could have reached Britain in about two more days. Thus if the bird was newly arrived when it was found on the 7th (and its moribund condition suggests that it had not been there long) its arrival fits in well with the weather pattern in the Atlantic, suggesting that it had spent at least five days on the crossing—presumably without obtaining food or water on the way. This astonishing feat is much superior to that normally considered possible for Passerines making long sea-crossings (Lack 1959), and may help to explain why rails so frequently reach remote islands where other land-birds are rare. In this connection it should be mentioned that the Purple Gallinule is nowadays recorded almost regularly on Tristan da Cunha, over 2,000 miles from the nearest part of its range in South America (Elliott 1957).

The American Purple Gallinule is about the size of a Moorhen (*Gallinula chloropus*), and sufficiently similar in shape and habits to be easily confused with that species when distance or poor light obscure the colour distinctions. The adult, however, is a vividly coloured bird, bright purple on the head and under-parts and brilliant bronze above, with white under tail-coverts, a bright red bill tipped with yellow, and a pale blue "shield" on the forehead. Immature birds are more like young Moorhens, having brown heads, whitish under-parts and bronzy-brown backs, but they have pure white under tail-coverts and lack the white stripe on the flanks (see Hollom 1960 for other distinctions). The legs are bright yellow at all ages, and the

grotesquely long toes are often striking as the birds walk—with surprising grace and stealth—over floating vegetation, constantly cocking up their tails to display the white undersides.

This bird inhabits a wide variety of fresh-water marshes, from forest-ringed lakes in the tropics to rice-fields in the southern United States, but it is particularly associated with places where lily-pads or other plants form a carpet of vegetation floating on the surface of shallow pools. One of its most characteristic feeding habits is to roll up the leaves of these plants—with deft movements of its foot and bill—to reach snails or other molluscs on the undersides. In these marshes life at water level is often hazardous, however, and the species is much eaten by alligators, as any who have seen Walt Disney's film *Prowlers of the Everglades* will recall. It is perhaps for this reason that it spends much of its life above their reach, perching and resting in bushes and raising its nest several feet above water level. Indeed, much of its food is obtained in bushes and trees: in the southern United States it sometimes climbs rice stems to feed on the seed-heads (Pough 1951), and in the West Indies even climbs trees to feed on plantains and bananas (Wells 1902). According to Howell (1932), the food of those in North America is more or less equally divided between vegetable and animal items, and a similarly varied diet is recorded in the tropics (Gross and Van Tyne 1929). Parrot-like, it often lifts its food to its bill in its feet, and the feet are also used dexterously in the construction of the nest.

Nests are usually on floating islands and are sometimes built up as much as six feet above the surface of the vegetation; the birds commonly arch them over by weaving together the tops of the surrounding plants. The nest itself is loosely constructed of dried grass, reed stems and the like, and is often surrounded by a number of half-completed trial nests (Wayne 1910). One studied by Gross and Van Tyne (1929) in the Panama Canal Zone was notable for having a long woven "runway" extending for several feet down from it and up to a specially constructed platform near-by. The birds would run to this platform when disturbed and they could take flight easily from it despite the surrounding vegetation. The usual clutch-size in the United States is six to eight eggs, but Gross and Van Tyne's tropical nest held only four. The young hatch in 22-25 days and leave the nest within 24 hours, swimming freely and climbing well with the aid of a well-developed hook on their wings.

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Rose-breasted Grosbeak in Co. Antrim: a bird new to Ireland and Europe

A ROSE-BREASTED GROSBEAK (*Phencticus ludovicianus*)—a North American species not previously recorded in Great Britain or Ireland—was seen at Shane's Castle, Co. Antrim, on 24th November 1957, and recorded in the *Irish Bird Report* for 1957 (pp. 21-22). It was an adult male and the observers, Messrs. H. Dick and A. J. Tree, have provided the following particulars:

Head, throat and upper-parts black, the last seeming to be tinged with brown. Rump and large part of tail white, rest of tail black. Breast bright red and most conspicuous; rest of under-parts white. Wings barred black and white, very striking in flight. Bill shortish and stout, appeared whitish.

Size about that of a Song Thrush (*Turdus philomelos*). When perched it gave a very full-breasted appearance. It was extremely wild and the plumage showed no heavy wear or damage. It was essentially a black and white bird with a conspicuous white rump area and a red breast. It was seen perched at 30 feet and in flight from 30 to 60 feet.

As a male Rose-breasted Grosbeak was exhibited in the National Cage Birds Show at Olympia in London in January 1958, the question of importation and possible escape has naturally been given particular attention. We have been in touch with several aviculturalists and in particular Mr. R. C. J. Sawyer who is acknowledged to have an unrivalled knowledge of North American cage birds in this country. Writing in August 1958 he was good enough to tell us, "The Rose-breasted Grosbeak has only been imported a year ago for the first

time since pre-war days, and I had the handling of that consignment." After stating the whereabouts of the seven birds concerned he added, "I am quite sure that these are the only living specimens in this country and none of these have escaped".

The plumage description above might seem more appropriate to a male in spring than in autumn, which led us to consult Dr. Charles Vaurie, Assistant Curator of the American Museum of Natural History, New York. He kindly examined the series of skins there and wrote, "The Rose-breasted Grosbeak is one of our most individually variable species, so it is possible to find a November bird without brown mottlings below, though it would be unusual. Birds at this time of the year have brownish edges to the feathers of the back which would account for the statement from your correspondent that "the upper-parts seemed tinged with brown".

Notes on the Rose-breasted Grosbeak

By I. C. T. Nisbet

DESPITE THE SIMILARITY of its name, the Rose-breasted Grosbeak (*Phœucticus ludovicianus*) is a very different bird from the Scarlet Grosbeak (*Carpodacus erythrinus*) and Pine Grosbeak (*Pinicola enucleator*), which are familiar—at least vicariously—to the European bird-watcher. Its natural habitat is the deciduous woodland of eastern North America, and the male in Co. Antrim in November 1957 (see pages 149-150) was the first of the species to be recorded in Europe. About the size of a small thrush, the male is a striking bird in breeding plumage, being black and white with a patch of brilliant rosy red on its breast. The female is dull brown, with dark streaks on its back and underparts, but it is readily identified by its huge deep bill, striking white stripes on its head and its double white wing-bar. In winter the males remain black and white on the wings and tail, but the body plumage usually becomes streaky brown like that of the females; only a few retain as much of the breeding plumage as the one seen in Antrim. The birds have large heads and plump bodies, and though active when feeding they slink through the trees and bushes in a peculiarly furtive way, so that they would be very unobtrusive but for their constantly uttered note, a distinctive, sharp "keek". The male has an attractive mellow song, consisting of short warbled phrases which are somewhat reminiscent of the more melodious *Sylvia* warblers.

The Rose-breasted Grosbeak breeds north to about latitude 47° in eastern Canada, including Nova Scotia and New Brunswick but not Newfoundland, and south to the central United States. In the west its range is bounded by the treeless parts of the Great Plains, but beyond these, in the mountains of western North America, there

breeds a closely-related form, the Black-headed Grosbeak [*Ph. (I.) melanocephalus*]. The two forms meet in the narrow zones of riparian woodland along the rivers which intersect the Great Plains, and here they hybridise freely, with the result that many ornithologists now regard them as conspecific, although the males in particular look very different. A similar situation is found in several other arboreal birds in this part of North America—e.g. in the “orioles” (*Icterus*) and “buntings” (*Passerina*)—and is paralleled in the Old World by the Black-headed and Red-headed Buntings (*Emberiza melanocephala* and *bruniceps*), which interbreed where their ranges meet in Iran (Paludan 1940). Analysis of such hybridisation is of great importance in the study of speciation (Sibley and Short 1959, Sibley and West 1959).

The Rose-breasted Grosbeak winters in northern South America and in parts of central America, which it reaches by a long flight over the Gulf of Mexico (Lowery 1945, Stevenson 1957). In the spring, indeed, it is one of the most conspicuous of such trans-Gulf migrants, because it is one of the earliest, and thus it often runs into the last of the strong cold fronts which sweep across this area during the winter months; these bring cold northerly winds and rain, which during April often precipitate spectacular numbers of birds on to the northern coast of the Gulf (Lowery 1945, Bagg 1956). Another interesting feature of this early spring migration is that the first falls of migrants in the southern United States are often matched by simultaneous arrivals far to the north-east, i.e. in New England where the bulk of the population does not normally appear until several weeks later. Bagg (1955, 1956, 1958), who studied the phenomenon particularly in the Indigo Bunting (*Passerina cyanea*), showed that this prolongation of migration coincides with strong following winds, and concluded that the birds involved cross the Gulf of Mexico and Florida without stopping, and then continue north-east over the Atlantic until they reach a landfall in New England or Nova Scotia—more than 2,000 miles from their starting-point in central America! It is not surprising that a bird capable of such a flight, and adapted to a sea-crossing of over 600 miles as part of its normal migration, should be able to cross the Atlantic in favourable circumstances.

In the breeding-season this species lives in deciduous woodland, being particularly fond of edge habitats where fairly large trees adjoin open ground more or less grown up with bushes. It is probably most abundant in tangled shrubbery along streams or around the edges of woodland swamps, but it also occurs commonly in second-growth woodland, and in some areas breeds in parks, suburban gardens and orchards. Its food is obtained largely in trees, and in the United States consists of roughly equal proportions of vegetable and animal matter (McAtee 1908). Berries, wild fruit and various seeds are eaten

more or less as they become available, and the birds also take a wide variety of insects, showing a special preference for larvae and adults of the Colorado Beetle (*Leptinotarsa decemlineata*).

The most detailed account of the nesting of the Rose-breasted Grosbeak was based on semi-captive birds (Ivor 1944), but the Black-headed form has been studied in detail by Weston (1947), and other accounts of the breeding of eastern birds (Allen 1916, Forbush 1929, Roberts 1936, Todd 1940) are all substantially similar in detail. The males are territorial, but apart from occasional fights in the presence of females they seem to have no striking displays except for a song-flight in early spring. This lack of conspicuous display, although apparently well authenticated, is surprising in such a brightly-coloured bird. The nest, built by the female, is a loose and bulky structure, made of small twigs, plant stems and rootlets, and is most commonly placed between 6 and 15 feet from the ground. The clutch usually consists of three or four eggs, but clutches of five are quite often found in the eastern United States and six have been recorded occasionally. Both sexes incubate, and the male in particular sings freely while on the nest; the incubation period has variously been recorded as 12 days (Weston), 12-13 days (Ivor) and 14 days (Forbush, Todd). Only one brood is produced each year, and the birds migrate south early; only stragglers are left in the breeding areas by late September.

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Report on rare birds in Great Britain and Ireland in 1958

*Compiled by G. A. Pyman
on behalf of the Rarity Records Committee*

THE FORMATION of a Rarity Records Committee, with expanded numbers, knowledge and functions to take the place of the vetting process formerly operated by this journal, was announced in August 1959 (*Brit. Birds*, 52: 241-244). With the co-operation of regional organisations, it aims to cope with the enormously increased number of observations of rare birds at a national level, so that these are assessed uniformly and not by the inevitably varying standards of the different county reports alone, and more particularly to bring together all the well-authenticated records in one place so that the general picture emerges. Each individual record of a rare bird has comparatively little value on its own, but when all are taken together they may act as pointers to the origins of drift and other migratory movements, while at the same time illustrating trends in range-expansion and such aspects of behaviour as the differences between the wanderings of adult and first-year birds. Twenty or even ten years ago such a general picture would have meant little because it could only have been of the sketchiest nature. These days, however, the much larger band of competent bird-watchers skilled in the considerable advances that have taken place in the art of field-identification, and not least the huge increase in observatory and trapping techniques, are now producing an annual flow of information on a scale which makes for a new and clearer appreciation of many problems.

Several birds which were formerly regarded as very rare vagrants are now found to be annual visitors in small numbers. One of these is the Melodious Warbler (*Hippolais polyglotta*) of which nearly five times as many as the pre-war grand total were recorded in 1958 alone (see page 169). This species, together with the closely related Icterine Warbler (*H. icterina*) which so nearly replaces it geographically, does in fact provide an interesting example of the pattern which begins to emerge when all the records are brought together (see page 170); and it is to further this aim of presenting the complete general picture that we have included a number of observations which clearly refer to one of these two warblers although specific identification was not possible. To exclude such observations because these two species happen to be very similar and comparatively difficult to separate in the field would be to distort their picture in relation to that of the other

warblers. A similar case is provided by the two dowitchers (*Limnodromus griseus* and *scolopaceus*), but otherwise we are of course only publishing records which we consider to be certain. There is no value in the inclusion of "probables" in square brackets (as is still so often done in some reports).

These, then, were the main aims behind the formation of this Committee, but another benefit has quickly become apparent. The bringing together and comparison of various detailed descriptions, followed by examination of museum skins and consultation with people who have special experience of the species concerned, is leading to a thorough reappraisal of the identification criteria of some groups. Such results will be published from time to time in this journal: the first, a paper on the field-identification of the marsh terns (*Chlidonias* spp.) in autumn and winter plumages, will be appearing shortly. The members of the Committee find themselves learning all the time and feel that the passing on of such information will not be the least of the values of their work.

The editors felt that there was a need for such a body as this, consisting of people who between them have first-hand field experience of the vast majority of the species likely to occur here; and that this feeling was general is apparent from the almost complete co-operation that the Committee now enjoys from editors of regional reports and from observatory wardens. At its annual conference in Oxford in January the Bird Observatories Committee agreed unanimously to give us its fullest support over the great volume of records from the ever-increasing network of regularly manned observation points.

As originally constituted (in June 1959) the Committee consisted of P. A. D. Hollom (Chairman), G. A. Pyman (Hon. Secretary), H. G. Alexander, I. J. Ferguson-Lees, D. D. Harber, A. Hazelwood, H. P. Medhurst, Prof. M. F. M. Meiklejohn, Major R. F. Ruttledge (Irish records only) and Kenneth Williamson. In November 1959, however, H. P. Medhurst had to resign upon taking up a post in Aden and Dr. I. C. T. Nisbet, recently returned from America, took his place (*Brit. Birds*, 53: 3). Then in early January 1960 H. G. Alexander also went abroad, probably for about a year, and the loss of his vast knowledge gained in many parts of the world was deeply felt, even though it is probably only temporary. In his place, however, we were very glad to welcome K. D. Smith, who has had many years' experience of Palearctic migrants in Africa.

While dealing with observations for 1959 as they came in, the Committee's first task was to consider the 1958 records of the species listed in the original announcement and of certain well-defined races of equal rarity. Details have so far been obtained of all but 16 of the 360 or so records for that year known to the editors of *British Birds*, *Scottish Birds*, *Nature in Wales*, *The Irish Bird Report* and the various

English county reports or to the wardens of the bird observatories. About 27 of these records are still under consideration, but it may be some weeks before the last of them is cleared and it is felt that publication of this report should not be further delayed on their account. Such of these remaining 1958 records as are accepted will instead be published later this year in the next report which will otherwise deal with 1959 records.

In this, our first report, it may be helpful if we mention some of the principles by which we have been guided. First and foremost, we have made every effort to obtain full details of each occurrence including, where possible, not only a description of the bird but also an account of the conditions in which it was seen. In this connection we should like to draw attention to the editorial on this subject published in 1952 (*Brit. Birds*, 45: 1-2). There it was emphasised that notes taken on the spot and before a book has been consulted are the only ones of real value, and that these should also include details of distance, light, the nature of the ground and whether other species were actually present for comparison. Experience in checking these records is of considerable assistance in recognising a genuine field-description as against one that has been touched up after reference to books. We hope that this will be borne in mind because it is the aim of this Committee to raise the already high standard of sight records still higher. At the same time we consider the possession of some knowledge of an observer's reliability to be almost as important as the account of the observation itself. Consequently, unless people are known to at least one member of the Committee, we have taken steps to find out what experience of identification they have had. In addition, we have taken into account any factors which indirectly support a record, including in some cases the weather conditions and in others the simultaneous appearance of the same species (or ones of similar range) elsewhere in Great Britain and Ireland or adjacent parts of the Continent. Finally, each observation is considered on its merits and, although no record is accepted unless the regional organisation is in agreement or has at least been consulted, we have not been influenced by considerations that are purely local: in some areas, for example, it is the practice of the regional editors automatically to reject a first county record which does not have the support of a second observer.

The procedure we adopt has developed as we have gained experience. Records are sent round by post and only those which on first circulation are rejected by a majority of the Committee are immediately "out". If more than half the members are in favour of acceptance the relevant documents are sent back to the minority for further consideration. Depending on these further comments, the record may then be circulated once again round the whole Committee for a final decision,

often after additional information has been obtained from the observer. If at the end only one member of the Committee does not accept the record, then he is overruled, but if the observation is rejected by two or more it is discarded. We hope that by these systems very few bad records are accepted and a minimum of good ones turned down. No records committee is infallible and undoubtedly some correct identifications are rejected, not because we necessarily think them wrong, but because we consider the evidence insufficient and because it is better that some good records should go than that a number of dubious ones should be admitted.

Close liaison is maintained with the Records Committee of the British Ornithologists' Union whose function it is to adjudicate upon first records for Great Britain and Ireland. No record rejected by that B.O.U. Committee will be published by us, even if we consider it acceptable. So far as 1958 is concerned, the two records in this category to have been cleared by us—the American Purple Gallinule (*Porphyryula martinica*) and the Northern Waterthrush (*Seiurus noveboracensis*)—have been accepted by both bodies, while one other is still under consideration.

It has been somewhat disturbing to find what a large number of 1958 records had been accepted by regional organisations on the flimsiest of evidence or, indeed, in the complete absence of supporting details in some cases. The need for a full account of each observation cannot be stressed too much. In 1958 there were several records which were accepted locally without the descriptions being checked and which proved to have serious flaws when considered by this Committee—flaws which, had they been known, would undoubtedly have resulted in the rejection of these records by the county referees concerned.

We do not propose to mention here the records in 1958 county reports which we consider to be unacceptable. However, for the sake of the completeness of this journal, we are listing below a number of claimed occurrences for that year which appeared in the "Recent reports and news" feature and which we are now unable to accept after full consideration of the available details:

Little Bittern	Yare valley, Norfolk, 7th May (<i>Brit. Birds</i> , 51: 250)
	Cley, Norfolk, 26th August (51: 362)
Kite	North Walsham, Norfolk, 3rd March (51: 207)
	Kelling, Norfolk, 22nd March (51: 164)
	Woodbastwick, Norfolk, 26th May (51: 280)
White-tailed Eagle	Unst, Shetland, 8th July (51: 317)
Crane	Staines Common, Middlesex, 15th-16th March (51: 164)
	Saltwood, Kent, 5th April (51: 207)
	Midrips/Rye, Sussex, 7th April (51: 320)
	Dunwich/Walberswick, Suffolk, 21st and 25th May (51: 278)

Killdeer	Cley, Norfolk, 1st December (51: 528)
Great Snipe	Cley, Norfolk, 9th April (51: 207)
Hudsonian Whimbrel	Dublin Bay, Co. Dublin, 8th December (52: 32)
Black-winged Stilt	Thornham, Norfolk, 31st August (51: 363)
Cream-coloured Courser	Par Beach, Cornwall, 16th May (51: 278)
Mediterranean Black-headed Gull	Salthouse, Norfolk, 30th November (51: 530)
White-winged Black Tern	Blythburgh, Suffolk, 30th August (51: 363)
Roller	Mid Yell, Shetland, 5th September (51: 439)
	St. Mary's, Isles of Scilly, 22nd September (51: 439)
	Bamburgh, Northumberland, 24th September (51: 439)
Crested Lark	Dungeness, Kent, 24th November (two) (51: 530)
Black-eared Wheatear	Portland Bill, Dorset, 18th August (51: 362)
Marsh Warbler	Great Saltee, Co. Wexford, 1st September (51: 437)
Aquatic Warbler	Yalding, Kent, 31st August (two) (51: 362)
Arctic Warbler	Sands of Forvie, Aberdeenshire, 2nd September (51: 437)
Yellow-browed Warbler	Burn Halt, near Tiverton, Devon, 7th-8th April (51: 319)
Lesser Grey Shrike	Dartford, Kent, 7th May (51: 250)
Rustic Bunting	Cannock Reservoir, Staffordshire, 17th August (51: 362)
Little Bunting	Shellness, Sheppey, Kent, 13th September (51: 434)
	Shellness, Sheppey, Kent, 12th October (three) (51: 429)

It is likely that there will be several additions to this list after the outstanding 1958 records that were mentioned earlier have been finally considered.

As was announced in the original editorial in August 1959, species and some well-defined races which have been recorded not more than ten times in Great Britain and Ireland, as well as ones which have not been recorded at all during the previous 25 years, are still being published with full descriptions in this journal. Such birds are mentioned only briefly in the systematic list which follows, but have a cross-reference to the fuller publication. In a very few of these cases the record was accepted by the editors of *British Birds* before the formation of this Committee: such records have not been reconsidered by the Committee. The basic details given for each record in the list are (1) county; (2) locality; (3) number of birds *if more than one*, together with age and/or sex where established; (4) whether trapped or if dead; (5) date or extreme dates; and (6) observer or observers. With regard to the last, some birds were seen by many people and in such cases we have put the names of not more than three, with an indication that others were involved. Other relevant information and comments—for example, on the question of escapes from captivity—are included where necessary in a separate paragraph under the species concerned. In distant parts of the world there are certain species which would be very difficult to separate in the field from ones on the British list: in these cases we accept the record, but state below that the details do not rule out the other (usually extremely remote) possibility.

In accordance with the policy of the editors of *British Birds*, the nomenclature and classification throughout the systematic list is that given in the B.O.U. *Check-list of the Birds of Great Britain and Ireland* (1952), with the amendments proposed by the B.O.U. Taxonomic Committee in 1955 (see *Ibis*, 98: 157-168). In the case of sight-records of subspecies, however—in which category we also include birds trapped and released—we normally give these only as “showing the characters” of the race concerned, since determinations of this kind are primarily a matter for the museum worker able to compare his birds with a range of skins.

In conclusion, we should like to express our sincere appreciation of the co-operation shown by the great majority of local organisations and individual observers alike in producing original documents, dealing with innumerable queries and assisting in divers other directions. It is hoped to produce the 1959 report before the end of the year and thereafter one annually in the middle of the year. These aims will only be possible, however, if we receive any outstanding 1959 records now and if, in future, full details of each observation are sent to the editorial address in Bedford (or to K. Williamson in the case of the observatories) as soon as possible after the event.

In the early, exploratory stages our progress has sometimes been held up by delays in receiving information and also by the sheer mass of papers involved in considering two years' records in our first six months of existence. We hope that the publication of this first report will justify, and indeed strengthen, the confidence already shown in this Committee, and that a smoother and speedier flow and exchange of records will enable us to be of increasing help to both observers and regional editors. Their support is vital to the success of our efforts.

SYSTEMATIC LIST OF 1958 RECORDS ACCEPTED

Little Shearwater (*Procellaria baroli*)

Cheshire: near Stockport, moribund ♀ of Madeiran race *P. b. baroli*, 10th May; now preserved in the Bolton Museum, Lancashire (*Brit. Birds*, 51: 354-355).

Cory's Shearwater (*Procellaria diomedea*)

Co. Wexford: Great Saltee, single birds, 2nd and 4th September (J. J. M. Flegg, D. F. Musson)

Purple Heron (*Ardea purpurea*)

Essex: Walthamstow Reservoirs, adult, 25th May (J. Fitzpatrick).

Hertfordshire: Wilstone Reservoir, Tring, immature, 30th July-15th August (H. Cole, Mrs. S. Cowdy, R. S. R. Fitter *et al.*).

Kent: Stoke, immature, 2nd and 10th August (E. H. Gillham, G. Lambourn, C. A. Walker *et al.*).

Sussex: Chichester gravel-pits, 18th May (L. P. Alder); Rye Harbour gravel-pits, 18th June (D. D. Harber).

Little Egret (*Egretta garzetta*)

Cornwall: Hayle Estuary, 8th-18th May (Rev. J. E. Beckerlegge, A. G. Parsons *et al.*); Trewornan Bridge, R. Camel, 7th June (F. R. Smith).

Devon: Kingsbridge Estuary and Bowcombe Creek, 14th-21st May (D. R. Edgcombe, R. H. Stephens).

Sussex: near Rye, 16th-17th May (D. Cooke, J. R. Thompson); Pett Level, 19th May (R. Cooke, E. Giles *et al.*); almost certainly one individual.

Co. Cork: near Clonakilty, first few days May (B. O'Regan); Aghadown, near Skibbereen, 8th-23rd May (B. O'Regan); near Courtmacsherry, end May (B. O'Regan); probably all one individual.

It is of interest to bear in mind that before 1952 the Little Egret had been recorded in Great Britain and Ireland on only some twelve occasions. Since then, however, there have been something like three to six records nearly every year. There is no longer any suggestion (*cf. The Handbook*) that they are likely to have escaped from captivity. Such observations are always listed as *E. garzetta*, but it is conceivable that the Snowy Egret (*E. thula*) of North America might cross the Atlantic occasionally, particularly as the Little Egret is known to have done so the other way at least twice. The two birds, regarded by some authorities as conspecific, are indistinguishable in the field.

Squacco Heron (*Ardeola ralloides*)

Devon: Slapton Ley, 1st-9th June (M. R. Edmonds); Bampton, 17th July (Dr. Ingram, J. L. Maunder, R. H. Webster); may refer to one individual.

These are the first records since the two in 1954 (*Brit. Birds*, 48: 129).

Night Heron (*Nycticorax nycticorax*)

Kent: Mersham, near Ashford, immature dead, 10th February (*per* H. E. Axell, Dr. J. M. Harrison, W. S. Nevin); now in Dr. J. M. Harrison's collection.

As previously pointed out (*Brit. Birds*, 47: 353-354), Night Herons are to some extent open to the suspicion of being escapes from Edinburgh Zoo. The history of the colony there has been described in detail by D. F. Dorward (1957, *Scot. Nat.*, 69: 32-36). In brief, it is that in 1936 six birds, presumably of the North American race *N. n. boactli*, were obtained from Canada and kept unpinioned in a roofed aviary. Breeding took place in 1938 and has done so every year since. Another pair was imported from Canada in 1946 and by that time some 27 birds were present. In December 1950 the aviary fell into disrepair and a few escaped. In May 1951 the roof was removed and the colony was free. The number of birds at that time was 18, ten having been exchanged. In January 1955 there were 20

adults and four juveniles. It is not known how many have gone away over the years, but a number remain unaccounted for when compared with the average annual increment. There have been several records within a few miles of Edinburgh which presumably refer to birds from the Zoo and a question mark is thus inevitably cast against the increased number of records of Night Herons in other parts of the country in recent years. There were no records between 1930 and 1947, then one in the latter year and one in 1949, followed by six in 1953-54 in various parts of England and several since. On the other hand, a colony of Night Herons established itself in Holland in 1946 (T. Lebre, *Ardea*, 35: 149-156) and this may be the source of the post-war records, particularly as the majority of these have been from the east and south coasts.

Little Bittern (*Ixobrychus minutus*)

Cornwall: near Jacobstowe, Bude, first-summer ♀, 11th May, died subsequently (Mrs. F. E. Carter).

Essex: Tillingham, moribund adult ♀, late May (L. H. Symes).

Kent: Yalding gravel-pit, adult ♀, 10th August (W. G. Jarvis).

Somerset: in one locality a ♂ was seen on a number of occasions between 21st June and 1st August, and a ♀ on 18th and 27th July and 12th August (Mrs. M. L. Colthurst, B. Little, D. E. Slocombe *et al.*); near Keynsham, 28th September (A. T. Coote, B. Coote, A. M. Lane).

Angus: near Forfar, ♀, 12th July (R. Middleton).

In the cases of the sight records, the descriptions do not exclude the possibility of the Least Bittern (*I. exilis*) of North America.

Black Stork (*Ciconia nigra*)

Kent/Sussex: one, considered moulting from first-winter to adult plumage, frequented the coastal area between Stone Cliff (Kent) and Iden (Sussex), 7th August-14th September (C. W. G. Paulson-Ellis, G. des Forges, D. D. Harber *et al.*).

Glossy Ibis (*Plegadis falcinellus*)

Argyll: Tirce, early October to 26th (Miss M. McKinnon).

Teal (*Anas crecca*)

Co. Down: Downpatrick Marshes, single ♂♂ showing the characters of the Green-winged Teal (*A. c. carolinensis*), 16th February (J. V. Bateman, Miss M. P. McMillan *et al.*), 26th October (Miss M. Bruce) and 2nd November (R. W. Culbert, W. Finlay *et al.*).

Co. Kerry: Akeagh Lough, as above, 23rd November (F. King).

American Wigeon (*Anas americana*)

Inverness-shire: Beaully Firth, immature ♂, 9th October (Miss K. Bryde-Williams, D. I. M. Wallace).

Red-crested Pochard (*Netta rufina*)

Devon: R. Plym Estuary, ♀, 8th November 1958-3rd April 1959 (P. F. Goodfellow, L. I. Hamilton, D. J. Mitchell *et al.*).

Essex: Abberton Reservoir, single individuals on 19th January (Maj.-Gen. C. B. Wainwright), 1st-2nd June, trapped (R. V. A. Marshall, Maj.-Gen. C. B. Wainwright), and 7th October (R. V. A. Marshall).

Leicestershire/Northamptonshire/Warwickshire: Stanford Reservoir, Leicestershire/Northamptonshire border, 2♂♂, 15th March (F. E. R. Peach, W. S. Peach); Napton Reservoir, Warwickshire, 2♂♂, 16th March (J. H. Lowe); almost certainly the same individuals.

Sussex: Chichester gravel-pits, ♀, intermittently up to 27th February (Miss W. P. White *et al.*) and again on 20th March (A. B. Sheldon); Pagham lagoon, ♀, 23rd January and 16th February (Major W. W. A. Phillips), thought to have been the Chichester individual; Chichester gravel-pits, ♀, 6th December to end of year (D. Langford *et al.*).

Peebles/Midlothian: Portmore and Gladhouse Reservoirs, 19th October (R. W. J. Smith).

Co. Meath: R. Blackwater between Navan and Kells, adult ♀ shot, 26th January (*per* Rev. P. G. Kennedy).

With the exception of the Devon record, the above occurrences first came to light during the course of the recent enquiry into the status of this species in Great Britain and Ireland, and the Committee have been content to accept them on the strength of their inclusion in G. A. Pyman's paper (*Brit. Birds*, 52: 42-56), in which an attempt was made to assess the extent to which genuinely wild birds may be expected to occur in various parts of Great Britain and Ireland at different seasons. In connection with the Devon record, F. R. Smith has informed us that a female is now known to have escaped from captivity three or four years ago at Ivybridge, only six miles from the River Plym.

Ferruginous Duck (*Aythya nyroca*)

Devon: Fremington, immature, 28th September (M. Huxtable).

Essex: Abberton Reservoir, adult ♂, 29th October (R. Harkness).

Norfolk: near Norwich, adult ♂, 16th-30th March (M. J. Seago).

Surf Scoter (*Melanitta perspicillata*)

Co. Dublin: North Bull, immature, 3rd November-20th December (C. S. Holahan, J. O'Mahony, C. F. Scroope *et al.*).

Lesser White-fronted Goose (*Anser erythropus*)

Gloucestershire: Slimbridge, adult, 11th February (M. Davy).

Norfolk: Yare valley near Norwich, 19th January (P. D. Kirby, M. J. Seago) and 2nd March (R. E. Hitchcock, R. C. Plowright); possibly one individual.

Kirkcudbrightshire: adult, 17th January-25th February (D. G. Andrew, A. Baldrige, A. D. Watson *et al.*).

These three localities have produced Lesser White-fronted Geese with some regularity in recent years. The Gloucestershire birds are

found with White-fronted Geese (*A. albifrons*) and those in Norfolk and Kirkcudbrightshire with Bean Geese (*A. fabalis*).

Snow Goose (*Anser caerulescens*)

Lancashire: near Southport, adult blue phase Lesser Snow, *A. c. caerulescens* ("Blue Goose"), 19th October-first week December (R. Harrison, F. Moscrop, N. Rowbotham *et al.*).

Aberdeenshire: Loch of Strathbeg, three, 22nd October-late November (Miss E. A. Garden).

Argyll: Appin, 6th November (Miss M. Chisholm).

Perthshire: Kingoodie/Invergowrie Bay, 16th and 18th November (H. Boase).

West Lothian: near South Queensferry, four, 30th November (A. M. B. Maclean).

Co. Wexford: North Slob, adult blue phase, *ca.* 1st November 1957-*ca.* 1st February 1958 when inadvertently shot (Major R. F. Rutledge *et al.*); South Slob, white phase, first seen 8th December, later moved to the North Slob where it spent the winter (T. J. Underwood *et al.*).

We are indebted to A. Baldridge for informing us that three Snow Geese, two of them of the blue phase, wandered from a collection near Dumfries early in 1958. These are the only escapes reported which could conceivably have any connection with any of the above occurrences.

Red-breasted Goose (*Branta ruficollis*)

Sussex: near Amberley, 8th-15th February (*Brit. Birds*, 51: 192-193).

Brent Goose (*Branta bernicla*)

Essex: Foulness, an adult showing the characters of *B. b. orientalis*, the eastern Siberian/western Arctic American race which winters in the Pacific and is known as the Pacific Black Brant, 8th February, in a flock of Dark-bellied Brent Geese (*B. b. bernicla*) (P. J. K. Burton, M. R. Chettleburgh, R. M. Lerner).

P. J. K. Burton had located this bird in the same area in February 1957 (*Essex Bird Report* for 1957: 12). Enquiries have shown that there is little likelihood that it was an escape.

Canada Goose (*Branta canadensis*)

Argyll: Islay, a small, dark, short-necked Canada Goose, distinctly smaller than the Barnacle Geese (*B. leucopsis*) it accompanied and clearly an example of one of the small races of *B. canadensis* breeding in the North American Arctic, 5th April (J. Shepperd).

Golden Eagle (*Aquila chrysaetos*)

In view of continued breeding in Co. Antrim and regular observations in N.W. England, we are only considering records south of 54°N. (and not "outside Scotland"). In Co. Antrim a pair has nested since 1953 (*Brit. Birds*, 47: 272), rearing one eaglet in 1958 (J. A. Benington).

Kite (*Milvus milvus*)
(elsewhere than in Wales)

Cornwall: Launcells, 10th March (E. H. Ware).

Devon: Challacombe Common, 3rd May (R. M. Curber, P. J. Dare).

Kent: Dungeness, 5th April (H. E. Axell *et al.*).

Middlesex: Staines (King George VI) Reservoir, 1st April (R. Adams); Shepherd's Bush, 20th May (E. Simms).

Wiltshire: Chippenham, 13th April (C. Rice).

Yorkshire: Barnsley, 4th March (G. Aynsley); near Arthington, 6th March (D. Ward).

Aberdeenshire: Old Aberdeen, 13th February (Prof. V. C. Wynne-Edwards).

Several other Kites were claimed during the period covered by the above records, but the Committee have been unable to assess the authenticity of these reports owing to lack of supporting details. The impression gained, however, is of a quite exceptional influx during the spring of 1958.

White-tailed Eagle (*Haliaeetus albicilla*)

Norfolk: immature, first seen at Cley late in 1957, reappeared there on 9th, 12th, 15th and 19th January and 4th March; also seen in the Snettisham/Heacham area on 26th January and on several subsequent dates up to 14th February (H. P. Medhurst, R. A. Richardson, J. S. Clark *et al.*).

Suffolk: Havergate Island/Butley, immature, 28th February-2nd March (F. K. Cobb, G. J. Jobson *et al.*); may well have been the bird reported from north Norfolk (see above).

Red-footed Falcon (*Falco vespertinus*)

Dorset: near Warcham, ♀, 21st-24th May (Dr. J. S. Ash, C. T. Bispham, Dr. K. B. Rooke *et al.*).

Norfolk: Whiteslea, 12th and 22nd June (G. E. Bishop, E. Piggin, I. A. Williams *et al.*); Holme-next-the-Sea, immature, 13th-16th September (H. G. Alexander, W. B. Alexander, Miss P. B. Lind *et al.*).

Suffolk: Southwold, ♀, 9th-14th May (G. B. G. Benson, Dr. P. R. Westall *et al.*).

Sussex: near Seaford, adult ♂, 4th May (G. Campbell).

Crane (*Megalornis grus*)

Essex: Earls Colne, adult, found slightly injured 20th February, cared for by the R.S.P.C.A., released 28th February (Inspector Cooper, R.S.P.C.A., *per* G. A. Pyman).

Northumberland: Hadston, near Amble, 29th April-5th May (M. Flanighan).

Suffolk: Waldringfield, a party of five, 9th January; one bird soon disappeared but the remainder (two adults and two immatures) remained until 2nd March (F. K. Cobb, I. J. Ferguson-Lees, A. E. Vine *et al.*).

Caithness: near Westerdale, adult, 12th and 14th June (J. Gunn, L. Salmon).

Sutherland: Lothbeg Point, Helmsdale, adult, 6th August (D. J. Mitchell).

Co. Derry: Lough Beg, adult, shot *ca.* 24th July (*per* H. Dick, A. J. Tree).

The number of Cranes recorded in 1958 was much higher than usual and this very fact supports the impression that at least the majority were wild birds. The picture would not be complete, either, without some reference to the party of 6 which stayed at North Deighton, near Wetherby, Yorkshire, from 17th November to 7th December 1957 (*Y.N.U. Ornithological Report*, 1957: 50). It seems possible that those which appeared in Suffolk a month later were the remnants of this group and, separately or together, the two records provide the first evidence for many years of a party of Cranes wintering in this country.

American Purple Gallinule (*Porphyryla martinica*)

Isles of Scilly: Hugh Town, St. Mary's, immature picked up exhausted, 7th November, died on 9th; now in British Museum (Natural History) (*Brit. Birds*, 53: 145-146).

Little Bustard (*Otis tetrax*)

Berkshire: Compton Down, adult ♂ of Western form *O. t. tetrax* found injured, 28th July, died on 30th (Dr. A. McDiarmid); now in Dr. A. McDiarmid's possession.

Kent: near Tonbridge, 17th October (Dr. J. G. Harrison).

Kentish Plover (*Charadrius alexandrinus*)

(elsewhere than on the coast from the Wash to Hampshire and the Isle of Wight)

Glamorgan: Aberthaw, ♂, 7th April (D. Griffin).

Middlesex: Staines (King George VI) Reservoir, ♀, 1st April (J. Cook, Mrs. V. A. Gillham, H. P. Medhurst).

Killdeer (*Charadrius vociferus*)

Co. Kerry: Akeagh Lough, 26th February and 2nd March (F. King); near Blennerville, 20th November-2nd December (F. King).

Dowitcher (*Limnodromus* sp.)

Berwickshire: Hule Moss, 20th and 30th September (S. J. Clarke, Col. W. M. Logan Home, W. Murray).

Co. Dublin: Kilbarrack, Dublin, 19th October-1st November (P. D. Nolan, J. O'Mahony, G. B. Ryan).

Co. Kerry: Blennerville, 3rd December (F. King).

Two species of dowitcher are now recognised—the Short-billed (*L. grisens*) and the Long-billed (*L. scolopaceus*)—but insufficient details were noted in these cases to enable the birds to be specifically named in retrospect. It is expected that a statement on the subject of the two dowitchers will be published before long in this journal. Meanwhile, however, it is perhaps worth adding now that the points to note

particularly are the type of markings on the flanks and under tail-coverts, the call and the relative length of the bill in relation to the head.

Great Snipe (*Capella media*)

Gloucestershire: Slimbridge, 28th January (B. King).

Lesser Yellowlegs (*Tringa flavipes*)

Devon: Kingsbridge Estuary, 2nd September (M. J. McVail).

Suffolk: Havergate Island, 25th September (R. J. Partridge).

Co. Derry: Lough Beg, 24th May (A. J. Tree).

White-rumped Sandpiper (*Calidris fuscicollis*)

Devon: Wembury Point, 12th-22nd October (R. M. Curber, P. F. Goodfellow, G. G. Trenerry *et al.*).

East Lothian: Tynninghame Estuary, 12th October (T. Boyd, R. W. J. Smith).

Co. Antrim: Belfast Lough, 9th October (H. Dick).

Co. Kerry: Inch, Castlemaine Harbour, 22nd October (F. King, J. R. Smythies).

Note the closeness of the dates of these four occurrences.

Pectoral Sandpiper (*Calidris melanotos*)

Cornwall: Ponsadene, Penzance, 22nd September and following days (Rev. J. E. Beckerlegge); Marazion Marsh, 27th-30th September (G. Allsop, A. G. Parsons); considered to have been the same individual.

Middlesex: Perry Oaks sewage-farm, 20th-28th September (E. E. Green, C. M. Veysey, I. M. Walker *et al.*).

Pembrokeshire: Skokholm, immature, trapped, 26th September (Mrs. K. E. I. Barham, E. Brun).

Co. Kerry: Akeagh Lough, 21st September (F. King).

Co. Wexford: North Slob, 27th September (P. J. Roche, Major R. F. Rutledge, K. Williamson *et al.*).

Note that all these birds were seen within a period of seven days.

Buff-breasted Sandpiper (*Tryngites subruficollis*)

Fair Isle: 18th September (P. Davis, P. Hope Jones, W. M. Peet *et al.*).

Black-winged Stilt (*Himantopus himantopus*)

Cornwall: Hayle Estuary, two, 19th April (K. O. Nash).

Suffolk: Minsmere, 7th-29th June (H. P. Medhurst *et al.*).

Sussex: near Norman's Bay, 15th September (J. H. R. Boswall); Camber/Rye/East Guldeford, two, 20th-27th September, and at least one until 5th October (M. Edelston, G. des Forges, D. D. Harber *et al.*).

Renfrewshire: near Erskine Ferry, 5th October (P. R. Campbell).

Wilson's Phalarope (*Phalaropus tricolor*)

Anglesey: Malltraeth, ♀, 15th-16th June (*Brit. Birds*, 52: 386-387).

Bedfordshire: near Shefford, ♀, 10th-13th May (*Brit. Birds*, 52: 385-386).

Pratincole (*Glareola pratincola*)

Essex: Hanningfield Reservoir, with chestnut axillaries and under-wing coverts, 31st May (M. R. Chettleburgh, S. Hudgell, R. M. Lerner).

Only one European species of pratincole is now recognised, the Black-winged Pratincole (*G. nordmanni*) being regarded as a colour phase of *G. pratincola* that is more or less dominant in south-east Europe and south-west Asia (*Ibis*, 98: 161).

Mediterranean Black-headed Gull (*Larus melanocephalus*)

Dorset: Puddletown Down, adult, 1st April (H. J. C. Bridle); Portland Bill, adult, 19th October (R. Chainey, J. A. Wigzell *et al.*).

Co. Durham: Hartlepool, adult, 1st August 1957-9th April 1958 and again 17th August 1958-8th March 1959 (P. J. Stead *et al.*).

Essex: The Naze, adult, 17th August-27th September (J. A. Fowler, B. S. Meadows *et al.*) and 24th October (R. G. H. Cant); almost certainly the same individual.

Hampshire: Southsea, adult, 13th January and 14th, 17th and 21st February (T. E. Brice, R. Brown).

Sussex: Brighton/Southwick, adult, 5th February-26th March (B. A. E. Marr, C. M. James); Rottingdean, adult, 12th October (C. M. James).

Co. Down: Copeland Island, 27th August (M. C. Gray, J. Lyons, A. Rogers).

What are presumably the same birds have appeared annually at the Co. Durham and Essex localities since 1956. The species is now of regular occurrence on the Sussex coast.

White-winged Black Tern (*Chlidonias leucopterus*)

Carmarthenshire: near Llandefeilog, 8th March (G. R. Tucker); a notably early date.

Lincolnshire: Killingholme, immature, 24th-26th August (R. May).

Lincolnshire/Norfolk: Wisbech sewage-farm, immature, 21st September-7th October (A. Baldridge, J. A. W. Moyes, P. J. Stead *et al.*).

Whiskered Tern (*Chlidonias hybrida*)

Cornwall: R. Amble, 28th-29th May (A. Jeffreys, Miss E. M. Whelan, Miss K. Orr Wilson).

Gull-billed Tern (*Gelochelidon nilotica*)

Kent: Dungeness, 2nd May (J. A. Bailey).

Hampshire: Chichester Harbour, 18th May (K. Brown).

Sussex: Langney Point, 20th July (D. D. Harber).

Caspian Tern (*Hydroprogne caspia*)

Hampshire: Mudeford, 7th September (M. C. Adams).

Bridled Tern (*Sterna anaethetus*)

Somerset: near Weston-super-Mare, freshly dead, 17th October (*Brit. Birds*, 53: 32).

Great Spotted Cuckoo (*Clamator glandarius*)

Norfolk: Winterton, first-summer, picked up freshly dead, 6th August (J. Banc *per* G. T. Wilkins); now preserved in the Castle Museum, Norwich.

Alpine Swift (*Apus melba*)

Norfolk: Trimingham, 18th August (R. P. Bagnall-Oakeley).

Suffolk: Minsmere, 21st June (G. J. Jobson, H. P. Medhurst *et al.*).

East Lothian: Dunbar, 11th October (A. Macdonald).

Co. Wexford: Great Saltec, 14th-15th September (T. Ennis, Major R. F. Rutledge, K. Williamson *et al.*).

Bee-eater (*Merops apiaster*)

Kent: Betteshanger, 11th July (J. R. Rose).

Leicestershire: Loughborough sewage-farm, 13th September (R. A. O. Hickling).

Lincolnshire: Gibraltar Point, three, 2nd September (F. Norris, D. Parr, A. D. Townsend *et al.*).

Pembrokeshire: Dale Fort, Haverfordwest, two, 31st May (P. A. Alderson, J. Cooper *et al.*).

Surrey: Beddington, adult, 5th August (B. S. Milne).

Sussex: North Lancing, 19th September (R. J. Wilmshurst).

Roller (*Coracias garrulus*)

Isles of Scilly: Porthellick, St. Mary's, 6th May (Miss M. C. Grundy, Miss M. E. Price); what was assumed to have been the same bird found dead on 11th (R. Symons).

Orkney: Randall/Deerness/Wideford Brac, in various localities between 27th May and 21st July (E. Balfour, Miss M. Traill Clouston, R. Watson *et al.*); probably the same individual.

Co. Kerry: Castlegregory, freshly dead, 23rd May (*per* Rev. P. G. Kennedy).

Short-toed Lark (*Calandrella brachydactyla*)

Yorkshire: Spurn Head, 30th November (J. Cudworth, J. K. Fenton, P. Hope Jones *et al.*).

Co. Antrim: Duncrue Street Marsh, Belfast, 22nd-23rd August (H. Dick, A. J. Trec).

Lesser Short-toed Lark (*Calandrella rufescens*)

Co. Wexford: Great Saltec, five 22nd March, one 23rd, two 24th and four 25th (R. G. Pettitt, Major R. F. Rutledge).

A statement on the occurrences of the Lesser Short-toed Lark will be published shortly in this journal.

Crested Lark (*Galerida cristata*)

Devon: Exmouth, 29th December 1958-3rd January 1959 (R. G. Adams, F. R. Smith, W. H. Tucker).

As with other sight records of Crested Larks in these islands, it is

almost impossible to exclude the admittedly remote chance that the bird was a Thekla Lark (*G. theklae*), the very similar species found in the Iberian Peninsula and North Africa.

Nutcracker (*Nucifraga caryocatactes*)

Kent: Ashley, 25th December (J. R. Rose).

White's Thrush (*Turdus dauma*)

Fair Isle: 18th September (J. A. Stout).

Black-throated Thrush (*Turdus ruficollis atrogularis*)

Fair Isle: adult male, trapped, 8th December 1957-*ca.* 22nd January 1958 (*Brit. Birds*, 51: 195-197, plate 33).

Gray-cheeked Thrush (*Hylocichla minima*)

Fair Isle: first-winter, trapped, 29th October (*Brit. Birds*, 52: 316).

Desert Wheatear (*Oenanthe deserti*)

Essex: East Mersea, immature ♂, 12th-13th January and 3rd February (*Brit. Birds*, 51: 275-276).

Thrush Nightingale (*Luscinia luscinia*)

Fair Isle: trapped, 15th-17th May (*Brit. Birds*, 51: 356-357).

Great Reed Warbler (*Acrocephalus arundinaceus*)

Suffolk: Minsmere, 28th June (F. D. Hamilton, C. K. Mylne, Mrs. N. Mylne).

Shetland: Duingarth, 4th-5th June (L. A. Brown, Dr. W. J. Eggeling, L. S. V. Venables *et al.*).

In neither of these cases does the description rule out the Clamorous Great Reed Warbler (*A. stentoreus*) of southern Asia and Egypt, notably the less rufous race *brunnescens*. The observer faced with the identification of a Great Reed Warbler should also bear in mind that there are other large brown and buff warblers of comparable size to be considered—notably the Thick-billed Warbler (*Phragmaticola aëdon*), which has occurred on Fair Isle (*Brit. Birds*, 49: 89-93), and Gray's Grasshopper Warbler (*Locustella fasciolata*), which has been recorded on Ushant, France.

Aquatic Warbler (*Acrocephalus paludicola*)

Berkshire: Windsor Great Park, 14th September (E. E. Green, P. N. J. Lette, T. Walker).

Hampshire: Farlington Marshes, 6th August (J. Simons); Ashlett, 6th September (J. K. Bowers, J. H. Taverner).

Norfolk: Holme-next-the-Sea, 20th August (A. Dobbs, Mrs. H. Dobbs).

Northumberland: Holywell Ponds, 20th-21st August (M. Bell, D. Howey, Dr. J. D. Parrack).

Sussex: Sidlesham Ferry, 21st September (M. Shrubbs).

Isle of Wight: St. Catherine's Lighthouse, 17th August (J. K. Bowers).

Wiltshire: Coate Water, Swindon, trapped, 2nd September (D. Felstead, G. L. Webber).

Fair Isle: trapped 6th September, seen to 10th and on 15th; thought to be only one individual (P. Davis, P. Hope Jones).

Co. Wexford: Great Saltee, 3rd September (J. J. M. Flegg, D. C. Lang *et al.*); 1st/2nd October (P. P. Creed, P. D. Nolan *et al.*).

Melodious Warbler (*Hippolais polyglotta*)

Caernarvonshire: Bardsey Island, three trapped, 5th, 6th and 7th September (R. W. Arthur *et al.*).

Dorset: Portland Bill, two trapped, 17th August (J. S. Ash *et al.*) and 28th August (A. J. Hold, J. H. Morgan *et al.*), and one other seen, 3rd September (R. J. Jackson).

Pembrokeshire: Skokholm, three trapped, 15th August and 9th and 21st September (Mrs. K. E. I. Barham, E. Brun).

Sussex: Holywell, Eastbourne, trapped, 17th August (D. D. Harber).

Co. Wexford: Great Saltee, three trapped, 5th, 9th and 11th September, and one present until at least 16th (J. F. Card, R. A. Card, T. Ennis *et al.*).

August/September 1958 was a remarkable period for this species (*Brit. Birds*, 52: 363-365). In addition to these 13 records of birds examined in the hand, there was one other trapped of which we have not yet been sent details and some at least of the unidentified *Hippolais* mentioned on the next page were almost certainly Melodious Warblers. Before 1954 there were only 7 records for Great Britain and Ireland, but since then systematic trapping at observatories and elsewhere has shown this species to be an annual drift-vagrant in the Irish Sea area and on the south coast of England.

Icterine Warbler (*Hippolais icterina*)

Dorset: Portland Bill, trapped, 1st September (K. V. Edwards, P. Partington *et al.*).

Lincolnshire: Gibraltar Point, two trapped and three others seen, 19th August (C. T. Beverley, H. Hems).

Norfolk: Holme-next-the-Sea, one trapped, probably a second seen, 3rd September (J. S. Clark, P. R. Grant, C. D. T. Minton); Blakeney Point, three (two trapped), 3rd September (R. A. Richardson), and one trapped, 11th September (R. J. Johns, R. A. Richardson); Cley, 4th September (R. A. Richardson); Titchwell, 6th September (D. Holmes, R. J. Johns).

Northumberland: Monks' House, Seahouses, trapped, 3rd September (Dr. E. A. R. Ennion).

Yorkshire: Spurn Head, four trapped, 1st, 5th, 6th and 14th September (G. R. Edwards *et al.*).

Fair Isle: 23rd-25th August; trapped, 4th September (P. Davis, P. Hope Jones).

Isle of May: trapped, 19th August (J. M. S. Arnott, H. K. Larsen); two trapped, 28th August (Miss E. Green, A. Smith).

Shetland: Loch Spiggie, 3rd June (L. A. Brown, Miss I. M. N. Ryan, L. S. V. Venables).

Co. Down: Copeland Island, trapped, 14th-28th September (J. G. Gray).

Melodious or Icterine Warbler (*Hippolais polyglotta* or *icterina*)

Although it is not the Committee's policy to publish records of "probables", it is felt that there is a case for listing observations of birds which were either Melodious or Icterine Warblers, since it is not easy for any but the most experienced observers to separate these two species in the field and since they do form part of the general picture which is one of the aims of these reports. In addition, owing to the way these two very similar species replace each other geographically on the Continent, there is a remarkable "drift-shadow" effect to be seen in the autumn records (recently discussed by K. Williamson, *Brit. Birds*, 52: 364). As a result of this, a yellow *Hippolais* on the east coast in autumn is almost certain to be an Icterine, while one in the Irish Sea is only a little less likely to be a Melodious.

Birds which were of one or other of these two species were reported from Portland Bill (Dorset) on 3rd August (Miss M. D. Crosby, B. King), from Beacon Lane, Kilnsea (Yorkshire) on 25th August (Miss D. Darlow, G. R. Edwards) and from Bardsey (Caernarvonshire) on 18th and 29th August and 8th September (two) (R. W. Arthur *et al.*).

Subalpine Warbler (*Sylvia cantillans*)

Fair Isle: first-summer ♂, trapped, 12th June (P. Davis, P. Hope Jones); ♀ trapped, 13th-14th June (P. Adams, P. Davis, P. Hope Jones).

Isle of May: ♀, 16th and 22nd July, found dead on 23rd (Dr. W. J. Eggeling, A. D. Watson).

Greenish Warbler (*Phylloscopus trochiloides*)

Lincolnshire: Gibraltar Point, trapped, 3rd September (Mrs. L. Cave, F. Norris, A. D. Townsend).

Lincolnshire/Norfolk: Wisbech sewage-farm, 23rd November (J. A. W. Moyes).

Bonelli's Warbler (*Phylloscopus bonelli*)

Cornwall: Marazion Marsh, 14th September (*Brit. Birds*, 52: 317).

Yellow-browed Warbler (*Phylloscopus inornatus*)

Yorkshire: Spurn Head, trapped, 29th October (R. Chislett, R. M. Garnett *et al.*); 25th and 27th November (P. Hope Jones).

Fair Isle: trapped, 10th-12th October (P. Davis, P. Hope Jones).

Pallas's Warbler (*Phylloscopus proregulus*)

Kent: Sandwich Bay, 23rd November (*Brit. Birds*, 52: 317-318).

Richard's Pipit (*Anthus novaeseelandiae*)

Caernarvonshire: Bardsey Island, 14th September (Dr. R. J. H. Raines).

Middlesex: Staines (King George VI) Reservoir, 30th April (Mrs. V. A. Gillham).

Somerset: near West Huntspill, 21st December 1958-mid-February 1959 (R. Angles, E. G. Holt, G. Sweet *et al.*).

Surrey: Beddington sewage-farm, 17th-18th April (J. Cook, H. P. Medhurst, B. S. Milne).

Yorkshire: Spurn Head, trapped, 27th-30th November (J. Cudworth, R. C. Parkinson, E. S. Skinner *et al.*).

Fair Isle: 30th September-4th October, and 14th October (P. Davis, P. Hope Jones *et al.*); two separate individuals.

Tawny Pipit (*Anthus campestris*)

Cheshire/Flintshire: Dee Marshes, 4th May (Miss M. Henderson).

Dorset: Portland Bill, 30th August (R. Chainey, D. Rear *et al.*); 11th September (J. V. Boys, N. H. Pratt *et al.*); 28th September (Dr. J. S. Ash, Dr. K. B. Rooke *et al.*); three, 30th September and 2nd October (H. Aitken, C. R. Macdonald *et al.*); 3rd-5th October (Dr. K. B. Rooke, K. D. Smith *et al.*); 9th October (A. B. Sheldon, J. A. Wigzell *et al.*).

Kent: Dungeness, 2nd May (H. E. Axell).

Co. Wexford: Great Saltee, 18th September (T. Ennis, A. J. Tree).

Pechora Pipit (*Anthus gustavi*)

Fair Isle: trapped, 30th September (P. Davis, J. Wilson *et al.*); 5th October (J. A. Stout).

Red-throated Pipit (*Anthus cervinus*)

Fair Isle: 18th and 20th May (G. Stout, Mrs. G. Watts *et al.*).

Yellow Wagtail (*Motacilla flava*)

Dorset: Portland Bill, adult ♂ showing the characters of the Black-headed Balkan race *M. f. feldegg*, 9th October (full details to be published shortly).

Lesser Grey Shrike (*Lanius minor*)

Fair Isle: ♀, trapped, 30th May-1st June (P. Adams, P. Davis, P. Hope Jones).

Fife: Wormistone Mains, Crail, ♂, 8th June (J. O. Andrew, B. M. Kelley *et al.*).

Woodchat Shrike (*Lanius senator*)

Berkshire: Blewbury Down, adult ♀, 14th August-6th September (L. R. Lewis).

Cheshire: Middle Hilbre, ♀, 10th May (W. B. Clarke, G. A. Johnson, J. Noonan).

Devon: Seaton Landslip, ♂, 1st June (D. E. Paull).

Dorset: Portland Bill, immature, 14th September (Dr. J. S. Ash, D. K. S. Blanchard *et al.*); immature, trapped, 7th-23rd October (Miss M. D. Crosby, D. J. Godfrey *et al.*).

Gloucestershire: near Dursley, 27th May (M. H. Port).

Norfolk: Salthouse Heath, first-summer ♂, trapped, 4th-9th May (R. P. Bagnall-Oakeley, R. A. Richardson *et al.*).

Pembrokeshire: Skokholm, first summer ♀, trapped, 4th June (Mrs. K. E. I. Barham, E. Brun); juvenile, trapped, 3rd August (Mrs. K. E. I. Barham, E. Brun); juvenile, trapped, 29th August (Mrs. K. E. I. Barham, K. Williamson).

Sussex: Portslade, immature, 7th-9th October (B. A. E. Marr, M. H. Port, G. A. Sutton).

Co. Wexford: Great Saltee, ♂, trapped, 3rd-9th May (P. J. Roche, R. G. Wheeler *et al.*); ♀, trapped, 6th-14th May (J. T. Lang, W. E. Waters *et al.*); immature, trapped, 3rd-4th September (J. J. M. Flegg, D. F. Musson *et al.*); adult ♂, trapped, and two immatures, 6th September (J. J. M. Flegg, D. F. Musson *et al.*).

Northern Waterthrush (*Seiurus noveboracensis*)

Isles of Scilly: St. Agnes, trapped, 30th September-12th October (full details to be published shortly).

Rose-coloured Starling (*Sturnus roseus*)

Nottinghamshire: Watnall, adult, 1st September (C. W. Ross, P. I. Vickers).

Isle of Wight: Sandown, adult, 18th October (J. K. Bowers).

Fair Isle: adult, 29th July-10th August; two immatures, 12th September (P. Davis, P. Hope Jones *et al.*).

Shetland: Fetlar, adult, 7th-8th September (R. N. Winnall).

Wigtownshire: Wigtown, adult, 14th-18th August (Miss M. McKinna).

Scarlet Grosbeak (*Carpodacus erythrinus*)

Fair Isle: immature, trapped, 15th September (P. Davis *et al.*).

Co. Wexford: Great Saltee, first-winter or ♀, trapped, 31st August-4th September (J. F. Card, R. A. Card, D. C. Lang *et al.*).

Black-headed Bunting (*Emberiza melanocephala*)

Isles of Scilly: St. Agnes, ♂, 31st August-5th September (C. M. Perrins, Miss H. M. Quick, Miss J. M. Vaughan *et al.*).

Red-headed Bunting (*Emberiza bruniceps*)

Essex: The Naze, adult ♂, 14th September (H. Lilley, C. F. Mann, J. K. Weston *et al.*).

Fair Isle: adult ♂, 29th August (P. Davis, P. Hope Jones).

Inner Hebrides: North Rona, ♂, 25th and 28th June (T. B. Bagenal, D. E. Baird *et al.*).

Red-headed Buntings are now imported as cage-birds into Britain and other western European countries in enormous numbers each year, males outnumbering females by ten or twelve to one. Single birds can be purchased for as little as 7s. 6d. each and a comparison between this figure and the prices of other cage-birds gives some indication of the relative abundance of the Red-headed Bunting in captivity. It is more than likely therefore that the majority of records of this species at large refer to birds that have escaped from aviaries and cages.



PLATE 21. Ortolan Buntings (*Emberiza hortulana*) at typical nest on the ground in good cover, Finland, June 1958. Above, male feeding female as she broods; below, female bringing food to the four young (4-6 eggs are usually laid). The nest is built of grasses and lined with rootlets and hair (pages 173-174) (photos: Eric Hosking)





PLATE 22. Ortolan Buntings (*Emberiza hortulana*), Finland, June 1958. The male (above) has greenish-grey head and breast, yellow throat and "moustache", and pinkish-buff under-parts, while the duller female (below) is paler with head tinged brown. Note the deep-based, pink bill and yellow eye-ring (photos: Eric Hosking)





PLATE 23. Above, habitat of Ortolan Buntings (*Emberiza hortulana*), Finland, June 1958—an open area of silver birches and conifers with thick ground cover, next to cultivated fields. Below, a tug-of-war over a caterpillar. This female had the usually striking pale wing-edgings almost worn away (photos: Eric Hosking)

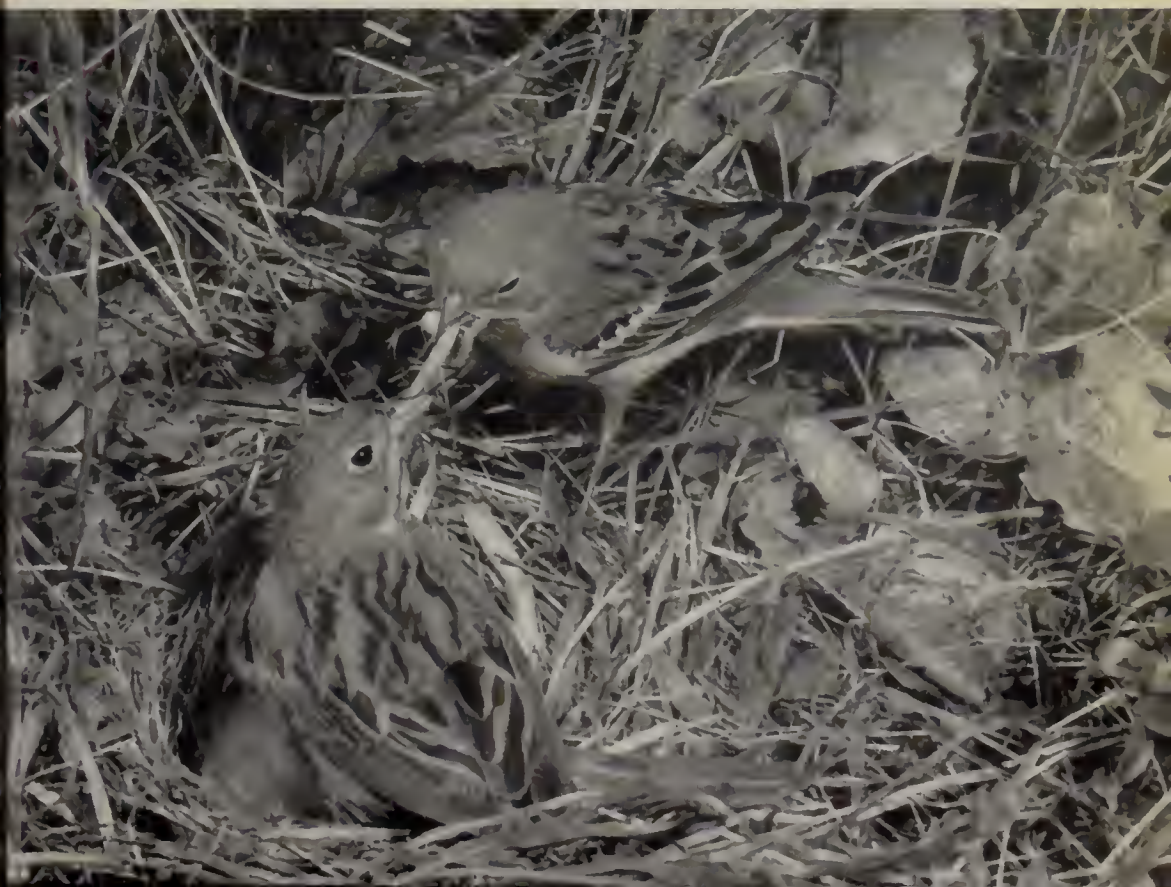




PLATE 24. Wart-like growths up to 1.5 cm. in diameter on the legs and feet of a female Carrion Crow (*Corvus corone*) due to fowl pox virus, Gloucestershire, January 1959 (slightly larger than life size). The right leg was the more affected, with the growths even partially enclosing the claws (pages 174-175) (photo: R. H. Poulding)

Yellow-breasted Bunting (*Emberiza aureola*)

Fair Isle: immature, trapped, 9th September (P. Davis, B. S. Nau *et al.*).

Rock Bunting (*Emberiza cia*)

Pembrokeshire: Dale Fort, Haverfordwest, 15th August (*Brit. Birds*, 53: 35-36).

Rustic Bunting (*Emberiza rustica*)

Co. Durham: Teesmouth, 7th September (K. Smith, A. Vittery *et al.*).

Norfolk: Blakeney Point, ♀ trapped, 10th-13th September (R. A. Richardson, M. J. Seago, P. H. G. Wolstenholme *et al.*).

Yorkshire: Blaxton gravel-pits, near Doncaster, 14th September (J. Burley, A. E. Platt).

Little Bunting (*Emberiza pusilla*)

Fair Isle: 4th April (P. Hope Jones); two, 15th May (P. Davis, P. Hope Jones); trapped, 23rd September (P. Davis, P. Hope Jones); 3rd-5th October (P. Davis, P. Hope Jones).

Studies of less familiar birds

105. Ortolan Bunting

Photographs by Eric Hosking

(Plates 21-23)

THE ORTOLAN BUNTING (*Emberiza hortulana*) appeared in this series as recently as May 1957 (*Brit. Birds*, 50: 197-200, plates 33-36), but it is our policy to repeat species when we consider that newer photographs have something to add. This series aims to provide informative material that is different from the normal run of bird pictures obtainable in countless publications and so for the most part it does not include the common British breeding species. Repetition is therefore both inevitable and desirable now that over a hundred and twenty different birds have been featured.

In the case of the Ortolan a very full text accompanied the original photographs and the reader is referred to that for the summary of knowledge that we usually try to provide. The nest shown now was found by the writer in Finland on 14th June 1958. The Ortolan and the Reed Bunting (*E. schoeniclus*) are there considered to be the third commonest buntings, after the Yellowhammer (*E. citrinella*)—which

outnumbers them by about ten to one—and the Rustic Bunting (*E. rustica*). The Ortolan occurs in many parts of Finland, including a little way north of the Arctic Circle, but it is commonest in the central west and this nest was in a sandy area of scattered trees and good ground cover at the edge of cultivation not far from the Gulf of Bothnia. As is most usual, it was on the ground and concealed by grasses and other vegetation a few inches high, in a clump of silver birches separating a ploughed field from a rough road. Other details are given on the plates which were obtained on 16th June when the young were about three days old. Twice when disturbed the brooding female left the nest in a “rodent run” posture. I. J. F.-L.

Fowl pox in a Carrion Crow

By R. H. Poulding

(Plate 24)

AT PURTON, GLOUCESTERSHIRE, on 10th January 1959, Mr. D. Huby found a Carrion Crow (*Corvus corone*) that was unable to fly. It had extensive warty growths on legs and feet and, in view of the bird's weak condition and the presence of these unusual lesions, it was killed and subsequently sent to me for a post mortem.

On examining the bird I found that it was grossly emaciated, weighing only 347 gm., while there was a loss of sheen from the contour feathers and the wing-coverts were brown to brownish-black. The toes and tarsi, the right more than the left, contained numerous hard keratinised growths varying in size up to 1.5 cm. in diameter and presenting a fronded appearance when cut across. On the right leg these papillomata had coalesced, partially enclosing the claws and extending up the outer aspect of the tarsus to the feathering on the tibia (see plate 24). No other growths were found externally. On dissection the bird proved to be female with complete absence of subcutaneous and visceral fat and showed marked atrophy of liver and intestines. The base of the right lung was slightly haemorrhagic with two whitish nodules, 2-3 mm. in diameter, on the ventral surface. The only other abnormal finding was a small amount of soft cheesy material at the base of the tongue and in the trachea adjacent to the syrinx. Paraffin sections for microscopic examination were prepared from one of the larger papillomata and also from the lung nodules.

The main microscopic features of the papilloma was the enormous proliferation of the epidermal cells which were divided into fronded lobes by bands of connective tissue. The outer layer of cells showed

extensive keratinisation whilst the deeper layers were greatly hypertrophied and contained acidophilic droplets or vacuoles. The lung nodules were non-specific inflammatory lesions in which no causative organism could be demonstrated. Sections of the papilloma were submitted to Professor C. S. G. Grunsell who reported the lesion as a manifestation of fowl pox—a virus disease rarely recorded in wild birds. Doyle and Minett (1927) state that fowl pox in domestic fowl is characterised by (a) wart-like nodules of comb, wattle and skin of head, (b) cheese-like diphtheritic membrane in the mouth and (c) an oculo-nasal discharge. An infected bird may have one or any combination of these, and also the warty growths may occur on the feet and legs. Synonyms for the disease given by these authors include contagious epithelioma, avian diphtheria, roup, canker and bird pox. A similar virus disease has been reported from canaries (Burnett 1933).

Edwards (1955) describes and illustrates multiple growths on the feet, legs and eyes of Dunnocks (*Prunella modularis*) which he trapped and ringed at Halifax. One retrapped five months later showed no evidence of the original growths. In a footnote to this communication Dr. J. G. Harrison is quoted as commenting that the disease, in view of the history, may have been some virus infection probably closely allied to the human wart. Similar wart-like lesions were found on the head of a Starling (*Sturnus vulgaris*) by Park (1959), but, as the growths had already occluded one eye and also interfered with beak movements, it seems unlikely that the disease would have taken such a benign course as that suggested by the subsequent recovery of the retrapped Dunnock. In neither of these cases was the lesion sectioned so it is not possible to state whether they were due to a fowl pox virus.

I am indebted to Mr. D. Huby for kindly sending the crow for examination, and also to Professor C. S. G. Grunsell, Dept. of Veterinary Medicine, University of Bristol, for obtaining confirmation that the papillomata were due to the fowl pox virus.

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The irruption of tits in autumn 1957

By *S. Cramp, A. Pettet and J. T. R. Sharrock*

(Concluded from page 117)

DISCUSSION

The reasons for the 1957 tit irruption

Lack (1954) suggested that food shortage is the ultimate factor in irruptions and that the proximate stimulus is sometimes this and sometimes a behaviour response to high numbers, as a result of which emigrations may occur before food becomes scarce.

In 1957 there were a number of reports that Blue and Great Tits were more than usually abundant after the breeding season in parts of the British Isles and N.W. Europe. Fortunately, long-term population studies had been carried out on these two species in both England and Holland and these agreed in suggesting the causes of these increased numbers.

A ten-year study (1948-57) of Blue and Great Tits in S. England (Lack 1958) showed that in three broad-leaved woods 76, 55 and 49 pairs of Great Tits bred in 1957, compared with the previous highest figures in the period of 40, 54 and 32 pairs. Similarly, in two pure oak woods, the preferred habitat of the species, 83 and 88 pairs of Blue Tits bred in nest-boxes (plus an unknown number in natural holes) compared with the previous highest figures of 61 and 77 pairs which, it is interesting to note, were in 1949, the year of the previous major irruption. (In two conifer areas the increase of Blue and Great Tits was not so striking and the Coal Tit had been no less abundant in two previous years.) Success per pair, however, was actually lower than usual in 1957, and the high numbers in the autumn were not due to an unusually successful breeding season, but to an unusually large number of breeding pairs resulting from a low mortality in the previous winter (Lack 1958).

In his report on a five-year study of relationships between populations of tits and Goldcrests and their food supply in the pine plantations of Thetford Chase (Norfolk/Suffolk), Gibb (in press) shows that in the winter of 1956-57 the stock of invertebrate food was sustained throughout January and February, when the weather was exceptionally mild, at a level only slightly less than in the autumn, instead of declining sharply at this time as in normal years. Aphids continued to breed prolifically during these two months. The winter began with all species more numerous than usual; and, with the great abundance of aphids in particular, neither Coal Tits nor Goldcrests decreased

perceptibly from October to February. Blue Tits, feeding less on aphids, decreased slowly from September to March, but the eventual breeding populations of all tits in the pines were about twice those of former years. Most of the Goldcrests left unusually early in the spring to nest elsewhere.

In Holland, H. N. Kluyver (*in litt.*) states that breeding Blue, Great and Coal Tits were extremely abundant in 1957. The numbers of pairs nesting and young fledging in five study areas with some 450 nest-boxes are given in Table III. It will be seen that in 1957 all three species showed an increase in breeding pairs, but that only the Great Tits produced more young than in the previous year, though more young Blue and Coal Tits fledged than in 1955. The population

TABLE III—NUMBERS OF PAIRS OF GREAT, BLUE AND COAL TITS (*Parus major*, *caeruleus* and *ater*) BREEDING IN SOME 450 NEST-BOXES IN FIVE AREAS IN HOLLAND, 1955-57, TO SHOW THE CORRESPONDING NUMBERS OF YOUNG FLEDGED (FIRST AND SECOND BROODS COMBINED)

			Great Tit		Blue Tit		Coal Tit	
			Pairs	Young	Pairs	Young	Pairs	Young
1955	..	..	122	897	22	239	9	129
1956	..	..	120	1,045	23	296	10	169
1957	..	..	248	1,559	34	291	20	156

of Great Tits at one of the sites, which had been surveyed regularly since 1912, had only been as high in two previous years, 1925 and 1941; in 1957 the increase was greatest in the poorer habitats, Scots pine woods, where this species is normally scarce. Kluyver suggests that the extremely high number of breeding pairs might be due both to a fairly successful breeding in 1956 and to the very mild winter of 1956-1957. Breeding success per pair in all three species was lower in 1957 than in the two previous years, agreeing with Lack's findings in England. Kluyver measured the winter population of Great Tits by counting the numbers roosting in the nest-boxes in December and January each year. The figures were 224 in 1955-56, 311 in 1956-57 and only 189 in 1957-58, reflecting both the high winter population in 1956-57 and the high emigration in the late summer and autumn of 1957. He considers that the movements were most probably stimulated by population pressure and both intraspecific and interspecific competition for food.

In Scotland, in another long-term study near St. Andrews, J. M. D. Mackenzie (*in litt.*) states that although he was unable to make a complete survey in 1957 the evidence suggests that Blue Tits were more successful than usual in marginal habitats and this could have accounted for the increase noted in the locality; there, also, the winter

was mild. In Kent, in an area of some 15 acres of woodland (mainly old oak, with a few conifers) C. S. Gerrish (*in litt.*) says that in 1957 there was a considerable increase in the breeding population of Blue Tits, which led to some unusual nest sites being used—open front nest-boxes, old nests of Carrion Crow (*Corvus corone*) and Magpie (*Pica pica*), oil drums, and a nest of House Martin (*Delichon urbica*) from which the tits ejected the owners. There was some evidence here that clutch sizes were above normal and second broods more frequent in 1957.

The causes and nature of irruptions are complex and vary with different species. The movements of Blue and Great Tits in 1957 appear to correspond more closely with the pattern described by Lack (1954) than with that outlined by Svärdsön (1957). Lack suggested that big irruptive movements might be stimulated by a behaviour response to high numbers and might then occur before food became scarce, whereas Svärdsön thought that they were started by food shortage and tended to stop as soon as areas of abundant food were reached (although he pointed out that they might pass over locally good food resources when a cold air mass had released their urge to fly). The high numbers were present in the late summer and autumn of 1957 in many areas, and such high numbers could lead to pressure on food supplies. There is no definite evidence of food shortage or otherwise in the areas they left, though in England a few observers commented on the poor crops of certain foods, e.g. berries, beechmast, seeds, and some insects and larvae, in their districts. It is difficult to believe, however, that the Blue and Great Tits which moved rapidly through many areas in the south of England in the autumn did so because there was then an absolute shortage of food, or that the areas where they were relatively less abundant in winter (e.g. some parts of southern England) offered less sustenance than places elsewhere where numbers were unusually high (e.g. in the north and west). Lack also pointed out that the irrupting birds often seem abnormally restless and excited and that the flocks contain an abnormally high proportion of juveniles. Many observers commented on this excitement in 1957 (which may have been a factor in their readiness to invade houses) and most ringers noted a high proportion of juveniles, whilst the recoveries show that birds of the year are much more likely than adults to move any distance. In the case of the Coal Tit, Gibb (*in press*) shows that many birds disperse from the pine plantations at the end of the summer before there is any food shortage, and he believes that aggressive territorial behaviour plays an important part in this.

Other points made by Svärdsön were that the irruption species studied by him start an annual flight which is stimulated by the same factors as affect ordinary migrants, but that the duration and length of this flight is very variable in different years; at the same time the

tendency to return to the home of the previous year is weak and the breeding range is therefore fluctuating. The species discussed by him, however, are ones mainly dependent on such vegetable food as seeds, berries and buds. Blue and Great Tits have a more varied diet and in their case there is little to suggest that movements of considerable numbers over any distance are an annual event; in fact, as has been shown in this paper, any journey over ten miles is unusual among British birds in normal years. Many Blue and Great Tits did return to the Continent in the spring of 1958 (though few Coal Tits appear to have done so) and, although the numbers were much less than those in the autumn, it is probable that this can largely be accounted for by the lower intensity of observation on the coasts (departures, too, are often less conspicuous than arrivals) and deaths during the autumn and winter; the latter were probably increased as a result of the high population, the large proportion of first-year birds and the cold spells during January-March 1958. The late return dates of some individuals on the coast suggests that odd birds may have remained to breed here, but there are no reports of unusually high nesting populations in 1958.* Finally, in N.W. Europe at least, there appears to be little evidence that the breeding areas of Blue and Great Tits fluctuate to any extent.

Svårdson mentioned also that the direction of flight of invasion species is often mainly west and the tit movements showed this tendency. The central European tits in 1957 appear to have moved chiefly south-west, whereas in N.W. Europe the direction was west and south-west until they reached the British Isles, when they tended to move mainly between north and west. It is difficult to suggest a reason for the northerly tendency in these movements here, which would seem unlikely to lead them to increased food supplies or less severe climatic conditions.

The Coal Tit, in contrast to the Great and Blue, is known to be an irruption species in some parts of Europe. It occasionally passes through E. Prussia in large numbers, often in those years in which Great Spotted Woodpeckers are also irrupting, and movements have been recorded from Sweden, Holland and Italy, whilst in parts of Russia it is a variable migrant (Lack 1954). There are, however, few previous records of such movements in the British Isles (only 1930, 1947, 1949 and perhaps 1921, with odd Continental birds in other years). The 1957 movements were recorded over a large area of N.W. Europe, including Belgium, Holland, N.W. Germany, S. Sweden,

*In 40 acres of dense oakwood at Eastern Wood, Bookham Common (Surrey), the site of a long-term census, the numbers of Blue Tits in the breeding-season of 1958 showed no significant change from the average of 1950-56 (no counts were made in 1957), but Great Tit numbers were only about half those of previous years (Beven 1959).

Finland and the E. Baltic, whilst there was a fall in numbers in Finland in the winter of 1957-58 compared with the previous year. This suggests that, unlike the Blue and Great Tit, birds of this species from N. Scandinavia (Sweden and Finland) may have been involved to some extent, although there are no ringing recoveries to confirm this. Passage of Coal Tits also occurred in Switzerland, some reaching N. Italy and S. France and one being recovered in E. Germany in the following breeding season. There were few reports of returning Coal Tits in Britain and none in N.W. Europe, perhaps indicating a heavy mortality during the winter.*

Other *Parus* species were clearly little involved. We have seen that a small passage of Marsh Tits was reported in Holland and Germany (and Switzerland) and that there were a very few reports of this species on the coasts of this country (as well as some inland increases), but there is no evidence that any crossed from the Continent. Nor does there appear to be any evidence of large scale movements of this species in the past. Movements of Crested Tits were noted only in Holland.

Svårdson stated that Long-tailed Tits invade Sweden from the east in some autumns. Reports of coastal movements in the British Isles are, however, infrequent and the Northern form (*A. c. caudatus*) has been only rarely identified. In 1957 it seems possible that birds from further north in Scandinavia were also concerned, for there was a heavy passage at Ottenby and a few flocks were seen at the Åland Isles, whilst birds apparently of the Northern race were noted near Bremerhaven in Germany. In addition, movement was reported in most countries in N.W. Europe and Switzerland, though in much smaller numbers than the Blue, Great or Coal Tits and up to a month later (October and November). No examples of the Northern form were recorded in the British Isles, but it seems probable that some of the intermediate race (*A. c. europaeus*) did reach our coasts from the Continent.

The paper tearing and other behaviour

We have seen that in the British Isles the irruption coincided with an increase in the long-standing and widespread habit of opening milk-bottles, and with an even more marked rise in attacks on paper, putty and other materials, although little of this behaviour was reported from elsewhere in Europe.† The opening of milk bottles obviously pro-

Gibb (in press) shows that Coal Tit mortality is density-dependent in the winter.

†Enquiries by Logan Home (1953) produced three cases of attacks on paper outside the British Isles, in France, Germany and the Canary Isles, and our correspondents gave negative replies for 1957, except for attacks by Great Tits on butter and wrapped meat in E. Germany and on putty in Czechoslovakia. Milk-bottle attacks have previously been reported from a number of European countries (Hinde and Fisher 1951).

vided food for the increased numbers of tits, but there is much less certainty about the causes underlying the attacks on paper, etc. Logan Home (1953), whilst drawing attention to the increased numbers of tits in the autumn of 1949, suggested that there was a tendency for paper-tearing to occur more often in dry autumns (September to November). After 1949, although paper attacks occurred on a small scale in most years, there was no major outbreak until the autumn of 1957, when this even larger irruption took place. In 1957, September rainfall in England and Wales was much above average (although rather below average in October and November); from 1950 to 1956 there were a number of years in which the September to November rainfall was well below average and yet no marked outbreaks occurred. It would seem therefore that paper-tearing is correlated with increased numbers of tits, rather than with the dryness of the autumn.

The reason for these attacks on paper is still puzzling. The most simple explanation is that given by Lack (1958)—that in the autumn the Blue Tit strips bark off branches in searching for food and that, owing to its abnormally high numbers, it was unusually short of food in 1949 and 1957. Logan Home was, however, emphatic that the birds were not driven into houses to attack paper because they were exceptionally hungry. His colour-ringed birds began tearing paper immediately after a good meal at the bird-table, and many of his correspondents said that the birds tore paper or other material while ignoring food placed near-by. The observers recording paper-tearing in 1949 were asked if they habitually fed birds and 80% stated that they did, while 22% of the letters received after the radio appeal (in which no specific question was asked on the point) volunteered such information; similarly, in 1957 24% of the correspondents stated, without being asked, that the birds were regularly fed. In 1957, as in 1949, several observers noted that paper-tearing ceased abruptly at the onset of severe weather and during both invasions October and November were the peak months for the attacks. In his studies of the feeding ecology of tits, Gibb (1954) found that it was in mid-winter that food was especially short and competition for it at its severest; he saw most supplanting attacks for food from November to January and more recently (in press) he has concluded that the population of the Coal Tit is controlled by food shortage in winter. In addition, Logan Home noted that the birds did not eat the paper; the scraps were not usually held in the foot or examined, but were dropped immediately. A number of observers confirmed this in 1957-58 and there were no cases of tits being seen to eat things under the paper. The entering of houses did, however, lead to the discovery and eating of such food as butter, chocolates and sweets in a number of instances, though these records were far fewer than the attacks on paper.

Nevertheless, the vastly increased numbers of tits must have led to greater pressure on the supply of food unless this increased in proportion with the birds or unless there is normally a superabundance of it. A parallel increase of all foods is unlikely, and it has already been mentioned that a few observers reported shortages of some berry and nut crops and certain insects. The poor crop of beechmast would affect Great, Blue, Coal and Marsh Tits, as Gibb has shown that all four species feed on it to an important extent in autumn. The mild winter, however, may have led to an increase in the numbers of some insects. Dr. R. Hull of the Rothamsted Experimental Station has pointed out that there were large numbers of aphids on crops in May and June 1957 in northern France, Belgium, Holland and part of W. Germany, as well as in this country (especially S.E. England), and he also believes that the mild winter of 1956-57 was the most important factor responsible (see also Gibb *in press*). He adds (*in litt.*) that the winter of 1948-49 was also mild and that this was similarly followed by an increase in aphids, though on a smaller scale. Tits, especially Coal Tits, do feed on aphids and he suggests that the high population may have been able to feed successfully on them in the early summer of 1957, and may then have found themselves short of food when aphid numbers dwindled in the late summer.

Tits are catholic feeders and there is no full information on the effect of weather and other factors on their different food supplies in 1957, so that it is impossible to say whether their food was in short supply that autumn, though this is possible and perhaps even probable. The scale of milk-bottle attacks and the severe increase in damage to fruit in Kent orchards (Wright 1959) suggest this. But though the tits which entered houses were often able to obtain adequate supplies of certain food items such as milk, or fats, nuts and bread from bird-tables, they may have still been short of certain kinds of insect food which provide some unknown but essential feature of their diet at this season. Hinde (1953) first pointed out that the movements made by tits tearing paper are very similar to those they make in tearing bark from a twig when searching for insects underneath and Gibb's researches (1954) showed that Blue Tits in deciduous woodland search dead parts of trees mainly in those months of the year when paper tearing is most frequently reported. Hinde, however, thought it highly unlikely that the birds were looking for some specific and essential item of food temporarily in short supply (though his reasons for dismissing this hypothesis are not clear) and argued that paper tearing was simply an expression of the hunting or food-searching drive. Given a certain combination of internal and external causal factors, he suggested, the tits must behave in this way; the behaviour brings "satisfaction" because the internal drive finds expression, even though no immediate biological advantage is gained. He quoted

Gibb's view that there might be a long-term advantage for a species relying on a succession of temporarily (super)abundant food sources, each liable to give out at any time, to continue a general search even in times of plenty to avoid a hiatus between exhausting one food supply and discovering the next.

It is worth stressing again that most of the attacks on paper and similar materials involved entering buildings, mainly houses. Tits are normally reluctant to do this, and it may be that the excitement and crowding in invasion years (or hunger) help to overcome their normal fears. And there is evidence that where tits are free to wander round inside a house attacks on paper are a regular occurrence in autumn. Thus Howard (1956) described how many of her Great Tits indulged in paper tearing, hammering at furniture or ripping upholstery between September and November every year. She referred to it as a "game" or "pastime" and said that it was abandoned by the end of November, when days are short and natural food takes longer to find. This view that tits tear paper not when food (whether general or particular) is in short supply, but when they have ample food and time and energy to spare is not inconsistent with Hinde's explanation. It is supported by another observer (Miss M. R. Robertson, *in litt.*) who has had Blue Tits entering the house regularly for some years. She also finds that some paper tearing occurs every year, between the end of the moult and the first onset of cold weather, and similarly believes that the tits cease then because they are too busy searching for food to have time for "games". She has found, however, that only a small proportion of her Blue Tits tear paper and tentatively suggests that tearing is an intensified form of play, indulged in by a few "rogue" individuals, probably males. This hypothesis needs testing by others who can study colour-ringed tits in such circumstances. F. Turček stated (*in litt.*) that paper tearing was usual in his captive Great and Coal Tits, and Logan Home quoted a number of records of such behaviour by tamed individuals of other species.

The correlation between increased numbers of tits in irruption years and increases in attacks on milk bottles, paper and putty appears to be established. Food seems clearly the reason for the opening of milk bottles (and perhaps putty attacks also, for in most cases the putty was fresh and it may then provide edible oils). There is, however, a sharp difference between those explanations of paper tearing which link it with a general or particular food shortage and those which connect it with an abundance of food that allows time for "play" or the expression of the hunting or food-searching drive. Further research appears necessary to resolve these differences.

The birds other than tits

It is probable that the mild winter of 1956-57 led to an increased

survival in N.W. Europe of many other species besides the tits, particularly the smaller ones which are often particularly vulnerable to hard weather. This seems the most likely reason for the increased coastal movements here of species which are regular migrants in variable numbers, such as Goldcrests, Firecrests and Tree Sparrows. The increases of Dunnocks, Wrens and Treecreepers on the coast and inland, and of Nuthatches entirely inland and Bullfinches mainly so, may also probably be ascribed to the mild winter here (though there are some indications in the case of the Bullfinch that a general increase is taking place in a number of areas in Britain). Reports of these species on the move in Europe were few (Nuthatches and Treecreepers in small numbers in Switzerland, and a heavy passage of Treecreepers at Ottenby, S. Sweden), but the southern and eastern distribution of many of our records makes it not impossible that odd individuals of some of these birds crossed the sea (e.g. the Treecreeper at Dungeness on 10th October).

In the cases of the other four species mainly concerned—Redpoll, Siskin, Jay and Great Spotted Woodpecker—irruption movements are known to occur over parts of their ranges. Whereas in the past the Redpolls involved in the British Isles have been mainly of the Northern or Mealy form (*C. f. flammea*), the movements in 1957 appear to have concerned the British and Central European races (*C. f. disruptis* and *cabaret*). Unusual passage of Redpolls on the Continent was reported only from Holland and Switzerland, and the ringing recoveries and dates of the main movements of this species on our east and south coasts suggest that mostly native birds were involved, or perhaps that some from the adjoining parts of Europe were re-orienting themselves after moving here. With the Great Spotted Woodpecker also, previous major irruptions have concerned the Northern form (*D. m. major*) and the reports of movements in the E. Baltic and the Åland Isles suggest that there may have been a small irruption of this race in 1957. Unlike 1949, this form was not identified in the 1957 movements in Britain, and the birds involved were probably natives with, possibly, in view of the more southerly distribution of records and the coastal movements reported in France and Holland, a few from the immediately adjoining areas of the Continent.

Siskins and Jays, like most of the spectacular irruption species, have specialised food requirements in autumn—Siskins being heavily dependent on the seeds of birch and alder (Svårdson 1957) and Jays on acorns—so that food shortage may have played a direct part in their movements. There was also a major irruption of Siskins in 1949 when birds ringed in Sweden and Belgium were recovered in the winter as far south as S. France, Spain and Italy; Svårdson shows that this was caused by a shortage of birch seeds in autumn, after a rich spruce crop in the previous winter had led to an unusually high

breeding population in Scandinavia. In 1957, however, unusual movements were recorded only in S. Sweden and Switzerland (apart from a few on Ushant, France). The passage of Jays in 1957 attracted more attention, with large-scale passage recorded in the adjoining parts of Europe (Holland, Belgium and Luxembourg), whence most of the birds seen here probably came, as well as in the E. Baltic and Switzerland. No definite information is available on the state of the acorn crop in N.W. Europe, but it is probable that the shortage noted in some parts of this country also occurred on the Continent.

SUMMARY

(1) In 1957, increases of Blue and Great Tits (*Parus caeruleus* and *major*), and to a much lesser extent of Coal (*P. ater*), were noted in the British Isles after the breeding-season and were followed by an influx of all three species on the east and south coasts of England in mid-September. The invasion reached a peak in early October, when almost the whole of the English coast from Northumberland to the Isles of Scilly was affected. On the west coast the main movements occurred later, and it is likely that some Continental and many native birds moved between north and west across the country. The coastal influx largely ceased in early November. Blue Tits were the most numerous; in the south Great Tits outnumbered Coal, while the position was reversed in the north. Long-tailed Tits (*Aegithalos caudatus*) occurred in much smaller numbers, mainly in October on the coast.

(2) Winter numbers were above normal in many areas. The return passage lasted from January to mid-May 1958, with peak numbers on the coast (mainly Blue and Great Tits, with very few Coal) in late March and April.

(3) The irruption was marked by an increase in the opening of milk-bottles by tits and an outbreak of paper-tearing on a scale not known here since 1949, as well as attacks on putty, textiles, etc. These attacks were most frequent between October and December.

(4) British-ringed Blue and Great Tits are normally very sedentary, but in 1957-58 the proportion of recoveries more than ten miles from the place of ringing almost doubled, while those of more than thirty miles trebled. Some juvenile tits ringed in summer 1957, and birds ringed on the coast and elsewhere after the irruption began, moved mainly between north and west in the autumn and winter. Recoveries after early March 1958 show return movements mainly between east and south-west. Recoveries confirm that Blue and Great Tits from N.W. Europe were involved in the irruption into Britain.

(5) Similar increases occurred on the Continent after the 1957 breeding-season, and in N.W. Europe as a whole there were marked movements of Blue, Great and Coal Tits in the autumn in many coastal and inland areas; these were mostly between south-west and west, extending to the British Isles and S.W. France. There was a similar passage from central Europe, through Switzerland to S. France and N. Italy. No reports of attacks on milk-bottles or paper were received from the Continent.

(6) It is argued that Blue and Great Tits should be regarded as true irruption species in N.W. Europe. The evidence for previous irruptions is discussed; these may often have been overlooked in the British Isles owing to the difficulty of detecting movements and increases of common species before the present network of coastal and inland observers was established. There is strong evidence that the irruption was due to the high numbers surviving the mild winter of 1956-57.

It may have been caused by a behaviour response to these high numbers before any actual food shortage occurred.

(7) While hunger probably led to the increased opening of milk-bottles, there are two conflicting kinds of explanation for the paper-tearing: one of these links it with food shortage (general or specific) and the other considers that it is the result of an abundance of food allowing time for "play" or the expression of the hunting or food-searching drive.

(8) Increases in other birds are discussed. These included four species that are known to be subject to irruption movements—Redpoll (*Carduelis flammea*), Siskin (*C. spinus*), Great Spotted Woodpecker (*Dendrocopos major*) and Jay (*Garrulus glandarius*). The movement of Jays in Britain was on a considerable scale, involving birds from adjacent areas of the Continent.

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Thanks are also due to the many listeners who responded to the radio appeals. But perhaps above all are we grateful to the observers throughout the country who kept records of the movements, increases and behaviour of these common species and so enabled the nature and extent of the irruptions to be adequately described. Their names are listed below. We regret that space has prevented their records being given in full and we hope they will feel that their labour was not in vain.

England

M. C. Adams, Mrs. Adlam, A. F. Airey, W. B. Alexander, A. Allen, R. C. Allan, Lt.-Col. W. E. Almond, R. Angles, G. A. Arnold, M. A. Arnold, R. W. Arnold, R. W. Arthur, Dr. J. S. Ash, J. Ashbee, Rev. J. Aspinall, H. E. Axell.

R. H. Baillie, C. Balch, A. Baldridge, D. K. Ballance, J. Barlee, N. Barnes, Mrs. R. G. Barnes, T. L. Bartlett, J. Bassett, I. R. Beames, Rev. J. E. Beckerlegge, D. G. Bell, T. Hedley Bell, H. Bentham, Dr. G. Beven, H. A. Bilby, D. F. Billett, J. Bonets, C. Gordon Booth, J. A. S. Borrett, J. K. Bowers, A. W. Boyd, H. J. Boyd, W. G. Breed, T. E. Brice, Miss E. P. Brown, K. W. Brown, Mrs. R. Brown, R. Brown, M. Bryant, A. Bull, A. L. Bull, J. F. Burton, Mrs. E. M. Butler, Major A. Buxton, E. J. M. Buxton, J. Buxton.

Mrs. O. M. Cairnes, Major F. G. Caldwell, Dr. Bruce Campbell, W. D. Campbell, T. Cavalier-Smith, P. J. Chadwick, W. A. Chaplin, Miss H. Charles, G. L. Charteris, Miss J. Chester, R. Chestney, R. Chislett, F. R. Clifton, P. R. Clarke, Miss J. Clarkson, Mrs. Clesney, Lady Mary Clive, G. E. Clothier, B. J. Coates, R. P. Cockbain, R. Codd, E. Cohen, H. Cole, Mrs. M. L. Colthurst, P. J. Conder, Miss M. Conway, A. J. Cooke, R. Cooke, B. E. Cooper, J. F. Cooper, R. P. Cordero, Mrs. M. T.

Corlett, A. V. Cornish, R. K. Cornwallis, E. J. Cottier, L. A. Cowcill, Mrs. S. Cowdy, R. A. F. Cox, S. Cox, Mrs. J. H. Craggs, G. Crees, M. D. Crosby, R. Crossley, J. Cudworth.

W. H. Dady, J. Darnell, G. P. Davies, M. Davy, H. Dawson, E. P. Day, Mrs. H. Dehn, R. H. Dennis, R. F. Dickens, G. Dinwiddy, A. Dobbs, G. Dunkling, C. J. Dymond.

W. Eales, Miss Eldridge, G. S. Elliott, E. A. Ellis, R. Elmes, R. D. English, Dr. E. A. R. Ennion, Rev. and Mrs. A. J. Evans, P. R. Evans.

D. Felstead, G. Felstead, C. Felton, R. Felton, I. J. Ferguson-Lees, J. Field, G. Flock, J. C. Follett, Miss K. G. Foott, F. M. Forth, J. T. Friedlein, D. Frumage, D. E. Fry.

C. S. Gerrish, E. H. Gillham, J. C. Gittins, Miss E. M. Goom, E. Gorton, H. G. Gould, E. Goulden, A. Grasemann, F. C. Gribble, Miss G. A. Griffiths, G. H. Gush.

E. Hardy, Dr. J. M. Harrison, R. H. Harrison, D. Hart, Rev. P. H. T. Hartley, C. H. Hawes, Mrs. M. Hayles, R. W. Hayman, Mrs. A. Haynes, A. Hazelwood, C. J. Henty, Canon G. A. K. Hervey, E. C. Herwin, M. Hessey, J. H. Hewitt, R. A. O. Hickling, J. A. Hicks, Miss E. M. Hillman, N. L. Hodson, H. Holgate, H. C. Holme, P. F. Holmes, F. J. Holroyde, R. C. Homes, A. Hopson, A. G. Horner, R. Hull, H. Hunt, Lord Hurcomb, H. G. Hurrell, W. D. Hyde.

D. E. Jebbett, G. J. Jobson, Miss K. M. Johnson, S. T. Johnstone, E. L. Jones, O. D. Jones.

J. F. C. Keep, Miss M. W. Kendall, Miss E. Kiddie.

Dr. D. Lack, P. D. W. Lalley, A. E. Land, H. Lapworth, J. J. Latham, Miss M. Law, C. R. Lawson, P. F. Le Brocq, Mrs. E. Lee, Miss B. Lonsdale, J. Lord, R. J. Lovell, W. G. Luton.

Lt.-Cdr. E. S. W. Maclure, B. A. E. Marr, Mrs. M. Marriott, R. V. A. Marshall, M. Marston, J. M. McMeeking, H. P. Medhurst, D. S. Miles, A. B. M. Mills, Mrs. I. Mitchell, K. D. G. Mitchell, D. J. Moor, N. C. Moore, P. J. Mountford, W. Mulligan, J. Mutimer.

J. F. Naylor, A. Y. Norris, P. North.

P. T. Paisey, K. H. Palmer, Dr. J. D. Parrack, E. R. Parrinder, A. G. Parsons, J. L. F. Parslow, C. H. F. Parsons, Miss J. M. Pattison, Mrs. J. Payne, J. F. Peake, H. Pease, Col. R. B. Phayre, N. R. Phillips, Major W. W. A. Phillips, E. G. Philp, Mrs. I. Picknell, A. Pilkington, W. A. Pope, R. M. C. Potter, H. E. Pounds, G. A. Pyman.

Miss H. M. Quick.

W. T. C. Rankin, P. A. Rayfield, G. H. Rees, B. W. Renyard, M. G. Ridpath, J. N. A. Rignall, P. Roberts, L. S. Robertson, R. W. Robson, M. Rogers, G. G. Rose, M. P. Roseveare.

B. L. Sage, Col. H. M. Salmon, Mrs. J. Scoles, R. E. Scott, T. Seabrook, M. J. Seago, D. R. Seaward, P. Seaward, Mrs. M. See, H. J. C. Seymour, T. B. Silcocks, J. Simons, T. R. Smeeton, M. S. J. Snoxell, C. S. Sore, J. H. Sparks, K. G. Spencer, R. Spencer, J. Stafford, Dr. John Stafford, Col. J. K. Stanford, P. J. Stead, T. J. Stephens, C. J. Stevens, I. F. Stewart, R. Stokoe, Mrs. D. E. Stone, R. C. Stone, B. M. Stratton, Dr. C. Sufferin, Mrs. G. Swanston.

J. H. Taverner, W. G. Teagle, L. C. Tearnan, C. F. Tebbutt, G. W. Temperley, Miss E. M. Thouless, H. F. Ticehurst, N. F. Ticehurst, A. D. Tomlin, B. P. Tompsett, G. E. Took, M. J. Torode, M. Townsend, W. H. Tucker.

A. Vittery.

J. Wagstaff, D. I. M. Wallace, J. J. Walling, E. Ward, D. G. Warman, Prof. E. H. Warmington, R. B. Warren, E. L. E. Watkiss, B. Watkinson, L. Watkinson, G. L. Webber, A. Weir, A. Welch, Mrs. A. West, J. K. Weston, P. D. Whalley, S. White, A. A. K. Whitehouse, J. S. Wightman, C. K. Wiles, E. Williams, Miss H. K. Willaws, K. Williamson, R. J. Wilmshurst, D. Wilson, D. R. Wilson, E. J. Wiseman.

A. Yorke-Norris, G. E. Young.

Wales

Mrs. K. E. I. Barham, D. H. Coggins, W. M. Condry, Miss N. Jenkins, R. M. Lockley, Miss V. J. Macnair, A. E. Male, Mrs. D. R. Rees, Mr. and Mrs. L. S. V. Vcnables.

Scotland

P. Davis, Dr. W. J. Eggeling, Miss W. U. Flower, J. A. Harris, Col. W. M. Logan Home, W. Hower, Rev. J. Leas, T. G. Longstaff, J. M. D. Mackenzie, A. T. Macmillan, M. F. M. Meiklejohn, C. P. Rawcliffe, Miss M. R. Robertson, Rev. E. T. Vernon, G. Waterston.

Ireland

M. Bailie, S. G. Bennett, R. Cowden, H. Gemmell, J. G. Gray, F. King, C. Meredith, Major R. F. Rutledge.

Channel Isles

Mr. and Mrs. K. Le Cocq, W. D. Hooke, S. F. Hooke, E. D. H. Johnson, I. H. Sutherland.

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APPENDIX A (1)—NUMBERS OF BLUE, GREAT AND COAL TITS (*Parus caeruleus, major and ater*) SHOWN IN OBSERVATORY LOGS
BETWEEN 11TH SEPTEMBER AND 6TH OCTOBER 1957

	September												October														
	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th	21st	22nd	23rd	24th	25th	26th	27th	28th	29th	30th	1st	2nd	3rd	4th	5th	6th	
Blue			1		1	12	4	10	4	4						1	2	2	1	65	13	22	24	2	50+		
Great						8		1	6										1	3					1		
Coal			2	2	2	1	1	3		4								4	1	13	8			3	1		
Blue	2	2	3	4	3	6	3	6	4				6	20							2	50+	2			200	
Great	1	2												1	14											12	
Coal			2											4													
Blue					9	25	5	3	3	3	6	2	20	10	15	5	8	6	3	15	20	15	10	25	20	275	
Great					2	1					1	1	1				2					1	2			50	
Coal			2		1	1	1																			40	
Blue							20+	25+	15	15	15+	15+	4+		10	12	12	200	460+	10	10	20	15	12	15	60	100
Great																1	3	27		1	20	12	15	4	1	1	
Coal																	1	1	1	1	2	2	1	1	2		
Blue																										25	
Great																										20	
Coal																										60+	
(2 pairs bred; c16 from 28.viii to 17.ix when increase to 22 and none next day; then up to 8 on several days)																											
Blue																											
Great																										30	
Coal																											
Blue																											
Great																											
Coal																											
Blue																											
Great																											
Coal																											
Blue																											
Great																											
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Blue																											
Great																											
Coal																											
Blue																											
Great																											

All the observatories were manned every day except during the periods marked by parallel dotted lines; a complete blank thus means that no birds were recorded although observers were present. p indicates that birds were noted but their numbers not estimated

APPENDIX A (2)—NUMBERS OF BLUE, GREAT AND COAL TITS (*Parus caeruleus*, *major* and *ater*) SHOWN IN OBSERVATORY LOGS
BETWEEN 7TH OCTOBER AND 31ST OCTOBER 1957

October

	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th	21st	22nd	23rd	24th	25th	26th	27th	28th	29th	30th	31st
Spurn (Yorkshire)																									
Blue	80+	42		6	19	15	5	80+	6	12	12	c150	24	8	7	9	18	12	6	2	3	24	4	1	
Great	5	1			2	1		1		5		40	30	1	4		2	1	2						
Coal	7	6			2	2	1			30	20	c50	1	3	1	1		4	8	2					
Blue	100+																				12				
Great																					6				
Coal																					6				
Gibraltar Point (Lincolnshire)																									
Blue	15	45	30	5	50	15	10	10	15	40	30	12	8	6	10	10	50	25	50	15	12	4	6		
Great	20	10	25	20	5	10	25	20	2	4	15	10	2	1			3	5	6	6	6	4	2	6	
Coal			6	10	10	1				1															
Dungeness (Kent)																									
Blue	300	50	20	75	30	25	60	30	30	.....	50	20	150	30	20			50	6	12	70			50	
Great	150	40	12	20	30	40	15	10	15	.....	15	10	20	10	6			15	15	10	10			6	
Coal	2	2	1	2			1	1	3	.....				5	6										
Portland Bill (Dorset)																									
Blue	125	200+	70	100	70	50	40	25	(some stayed and 12+ still present 7.xi)																
Great	40	50	70	50	50	60	50	30	(diminishing number stayed and 12+ still present 7.xi)																
Coal	20	20	20	25	20	20	20	10	(a few stayed to first week November)																
St. Agnes (Isles of Scilly)																									
Blue	35	12	40	20	c25	15	c20	c20	15	10	5	6	4	4	5	6									
Great	2	2	10	15	15	10	10	15	10	4	2	2	5	2	5	4									
Coal	14	8	15	3	30	5	3	4	5	6	1	4	10	6	3	5									
Lundy (Devon)																									
Blue	4	9	12	16	30	10	25	30	50	9	6	20	12	12	6	4	29	2	1+						
Great	1	25	11	6	12	5	5	7	15	2	8	16	12	6	4	4	8	6							
Coal	4	1	2	2	3	3	8	4	10	2	5	4	3	1	3	6	3								
Skokholm (Pembrokeshire)																									
Blue	c3	c75	20+	15+	c10	c10	5+	c5	c5	1+	5	50+	1+	10+	c10	c10	c10	p	p	10+					
Great	2+	c15	c5	2+	2+	c5	1+	2	2	1+	1+	2+	1+	1+	1+	7	1	1	1	1					
Coal	1	c120	c5	c15	c10	10+	1+	5+	c3	c3	2+	3+	1	4	c10	5+	10+	c5	p	p	10+				
Bardsey (Caernarvonshire)																									
Blue			1		2+	6+																			
Great			10+	12	1																				
Coal																									
Great Saltee (Co. Wexford)																									

All the observatories were manned every day except during the periods marked by parallel dotted lines; a complete blank thus means that no birds were recorded although observers were present. p indicates that birds were noted but their numbers not estimated

APPENDIX B—THE IDENTIFICATION OF CONTINENTAL TITS

The identification of tits from the Continent (especially from adjoining areas such as France and the Low Countries) is difficult in the field, and even in the hand. Only a few observers felt able to make definite claims of Continental birds in 1957-58 and those willing to express an opinion sometimes differed in the criteria they used. As the evidence from ringing recoveries and the observations in this country and abroad make it clear that Continental birds were involved in the irruption into the British Isles, it is not necessary to examine this complex problem in detail, but two aspects deserve mention.

Some ringers used the wing-measurements of the Blue Tit given in *The Handbook* (Witherby *et al*, 1938) as a means of separating British and Continental races, but as several observers have established that undoubted British breeding birds have wing-measurements in excess of those in *The Handbook* this method must be adopted with caution. During the irruption, however, there were a number of records of measured birds strongly suggesting the nominate race. For example, the *Dungeness Bird Report 1957* (p. 17) gives a summary of the wing-lengths of 208 Blue Tits trapped at Dungeness between 15th September and 17th November 1957, 182 being birds of the year; of these 208, 25 had wings of 67-69 mm. and these larger birds occurred mostly at the peak of the irruption.

Again, though some Continental Coal Tits can be recognised by the clear grey back, this character is of less value for birds from the adjoining areas of Europe, which were the ones mainly concerned in the irruption, for, as Snow (1955) has pointed out, the colour of the back becomes less pure blue-grey and more washed with olive southwards and westwards from Scandinavia, the Baltic and European Russia.

A. Hazelwood (*in litt.*) has suggested that a number of Blue and Coal Tits involved in the irruption in Cheshire and Lancashire and some Blue Tits from Spurn, which he examined, were of Scottish origin. However, we received no observational evidence to suggest any large increases after the breeding season of these species in Scotland, nor of movements from Scotland to N. England, except at Monks' House (Northumberland) where a southerly coasting of Blue Tits occurs most autumns and was not above average in 1957. There are no Coal Tit recoveries which throw light on this, and no distant recoveries concerning Lancashire Blue Tits, but recoveries relating to this species elsewhere in N. England suggest, and in two cases confirm, that some Continental Blue Tits were involved.

Opportunities for co-operation with French ornithologists

By Guy Mountfort

THE PAST FEW YEARS have seen a remarkable increase in the pre-occupation of European ornithologists with continental as distinct from local or national ornithology. This broadening outlook has arisen from three causes—the population-pressure of competent observers who are now seeking wider interests, the relaxation of foreign travel restrictions, and the recent availability in nine different languages of a standard illustrated field manual embracing for the first time all the bird species of the European continent. As ornithology is obviously best studied on at least a continental basis this development should be encouraged.

Not unnaturally there is a tendency for the first foreign excursions to be made to the more widely publicised centres, such as France's Camargue, Norway's Dovre Fjell, Holland's Texel, or, more recently, to Spain's *marismas*. This tendency is true not only of the British but also of the rapidly increasing numbers of excursionists from other countries. In consequence serious problems of over-crowding are being imposed on the people responsible for preserving these famous areas as bird sanctuaries, and restrictions on visits have had to be increased. It is to be hoped that British ornithologists will set a much-needed example by reducing the pressure on the established reserves. First priority for restraint needs to be given to the Camargue, where the problem of disturbance during the breeding season has become acute. The purpose of this article is to indicate alternative locations and opportunities which are available for seeing rare birds and for doing valuable field-work in other parts of France.

Ornithologists who travel abroad fall into two categories: those whose primary interest is to add to their "life-lists" and those who wish to make a serious contribution to a particular branch of ornithology. The growing cult of the "life-list" is a fairly harmless modern expression of the collecting urge and is infinitely preferable to the often ruthless collecting of eggs or skins in which our forebears indulged. It cannot, however, be said to serve any useful purpose by comparison with the more constructive ornithological pursuits and may even become a menace through disturbance of rare species. The skill and enthusiasm of the "life-listers" needs to be harnessed to a greater participation in productive field-work. Recent correspondence with French ornithologists confirms that admirable opportunities exist for combining holidays on the Continent (during which

the "life-list" may of course be indulged) with a number of valuable and interesting local studies.

We in Britain are accustomed to the considerable accuracy with which the geographical distributions of our bird populations are known and to the highly organised national census work which is so admirably directed by the British Trust for Ornithology. France is a much larger country and many parts of it are only very thinly populated by qualified observers. Although a few areas have been widely studied for many years,* the breeding and wintering ranges of birds in the greater part of France are still imperfectly known. The French avifauna is rich and varied, particularly in the eastern, central and southern parts, and the countryside offers incomparable opportunities to combine ornithology with enjoyable holiday-making. While the task of compiling and publishing information on a national basis must obviously be the responsibility of the French ornithological societies, qualified British visitors can give important assistance by contributing observations made during their excursions.

Organised field studies in France are chiefly the province of the Groupe des Jeunes Ornithologistes, an active body of keen amateurs which was formed about ten years ago. It has already carried out some excellent national studies, such as the recent Black Redstart enquiry published in its journal *Oiseaux de France*. The Secretary of its "Centrale Ornithologique" is Monsieur F. Spitz, of 129 Boulevard St. Germain, Paris 6, who will be glad to put intending British visitors in touch with the various regional ornithological centres. The senior society is the Société Ornithologique de France, of 55 rue de Buffon, Paris 5; the Secretary-General is Monsieur Robert Etchécopar and its journal, published quarterly, is *L'Oiseau*. The other important national body is the Société d'Etudes Ornithologiques, of 80 rue du Ranelagh, Paris 16; it publishes the quarterly journal *Alauda*, the joint Editors being Professor Henri Heim de Balzac and Monsieur Noël Mayaud. Within easy reach of our ringing enthusiasts is the Cercle Géographique et Naturaliste du Finistère; among its other activities this organises late summer ringing camps on Ushant. Its journal *Penn ar Bed* is edited by Professor Albert Lucas of the Lycée de Brest, Finistère. Mention should be made of the important Swiss society, the Société Romande pour l'Etude et la Protection des Oiseaux, whose interests also embrace France; its very active "Groupe des Jeunes" ringed 19,000 birds in two months at the Col de Bretolet trapping station in 1959. Its journal is *Nos Oiseaux*, edited by Monsieur Paul Géroutet of 13a Avenue Champel, Geneva. All these societies welcome British members, or subscribers to their journals, and would doubtless be glad of co-operation with their own members. Certainly

*An up-to-date list of the regional studies which are available was published last year by N. Mayaud in *L'Oiseau*, xxix: 355-368; this should be consulted.

anyone who proposes to do any field-work in France should become familiar with the journals mentioned. A word of warning is necessary, however. The French ornithological societies have been plagued in recent years by enthusiastic foreign "rarity-hunters", whose sole purpose appears to be to claim new species for France, usually without witnesses or supporting evidence! Such observations are no more useful than they are in Great Britain. A warm welcome will, nevertheless, be given to anyone who treats the occurrence of rare species with the same caution and insistence on substantiating evidence as do the editors of *British Birds*.

The opportunities for British contributions are legion. Many obviously promising geographical features in France, where migration should be observable, have not yet been adequately studied; for example, between the River Loire and the Pyrénées and along the Channel and north-west Atlantic coasts, or on the Mediterranean shores and islands. Even places which have already produced results, such as Ushant and the Cherbourg peninsula, merit repeated visits. (When he lived in France the writer once ringed 196 birds of 26 species in the space of a few hours on the Gatteville light.) Migration can also be observed in many inland regions, such as the mountain passes in the Alpes and Pyrénées and along the valley of the Rhône. Those interested in ecology have available ready-made study areas for judging the changes brought about by the great hydro-electric projects and damming, with its consequent massive destruction of established habitats, for instance on the Rhône and Durance rivers. Remarkably little is yet known about the ecology or distribution of birds in the Massif Central, where a curious mixture of northern and southern species and races can be observed. In this mountainous region the need to study the plateaux and valleys is of course as urgent as the need for high-altitude work. In the Vosges, Jura, Alpes and Pyrénées local observations have already indicated that there are wide variations in the breeding behaviour of birds in places only a few kilometres apart.

One tends to think of excursions to France only in terms of the breeding season, but there are fascinating opportunities for field-work in the autumn or winter. Duck and wader counting can be exciting in the huge inland marshes and pond areas of the south and central regions, many of which have never yet been visited by trained ornithologists. A list of the more important localities is given in Appendix 1(A). As an indication of the richness of bird-life which awaits those who are willing to look beyond the Camargue, visits to the Sologne region during a few week-ends between April and July revealed more than 120 breeding species within ten square kilometres. Similarly, 109 species were seen by the writer in four days in a very much smaller area on the River Yonne.

The altitudinal distribution of birds in the mountains in the southern half of France is still largely unknown, particularly in the Massif Central and southern Alps. An interesting project might be to define the respective heights at which the Wheatear (*Oenanthe oenanthe*) and the Black-eared Wheatear (*O. hispanica*) are found. Or to discover whether, as is suspected, the Fieldfare (*Turdus pilaris*) now breeds in the Savoie. Or to determine the as yet unknown southern limits of the breeding range of Tengmalm's Owl (*Aegolius funereus*) in the Alps. The puzzling discontinuous distribution of the Alpine Swift (*Apus melba*) and Pallid Swift (*A. pallida*) in southern France would provide another useful task. Those who prefer lowland birds should investigate the little-known ranges of the various herons in the breeding season and in winter. Among the waders there is ample scope: for example the Curlew (*Numenius arquata*) is now known to breed in about twice the number of areas reported in the last published *Liste des Oiseaux de France* and the ranges of few of its relatives are yet accurately known. The Black-tailed Godwit (*Limosa limosa*) almost certainly nests in other areas than those recorded in the Dombes and Vendée. For rarity-hunters who are able to cover a good deal of ground, an admirable project might be to attempt to measure the distribution of the Little Bustard (*Otis tetrax*); it is incidentally not necessary to go very far afield to see these interesting birds, as some are now breeding only half-way between Paris and the Belgian frontier.

More restricted tasks would be to find the northern limits of the Bee-eater (*Merops apiaster*) and Great Spotted Cuckoo (*Clamator glandarius*) in the Lower Rhône and Durance areas, into which these easily identified species are now spreading. Those who visit Alsace (a wonderful centre for tourism) might like to verify the suspected breeding there of the Red-breasted Flycatcher (*Muscivapa parva*)—see Appendix 2(c). Specialists in the birds of prey, or those who enjoy mountaineering, would find plenty to do in trying to obtain evidence of the breeding of the Lammergeier (*Gypaëtus barbatus*) in the Pyrénées. Those who prefer more intricate identifications could try their hands at disentangling the confusing over-lapping ranges of the host of *Sylvia* warblers which inhabit the Massif Central.

It is evident that many considerable changes in distribution are taking place in France. Cetti's Warbler (*Cettia cetti*) is now found north of Paris; the Collared Dove (*Streptopelia decaocto*) is rapidly pushing westward from the north-east; the Rook (*Corvus frugilegus*) is as speedily extending its breeding range southward and the Jackdaw is multiplying fantastically; the Black Redstart (*Phoenicurus ochruros*) and the Serin (*Serinus canarius*) are spreading westward in Bretagne and Normandie; the Subalpine Warbler (*Sylvia cantillans*) appears to be moving north; the Black Woodpecker (*Dryocopus martius*) is taking advantage of changes in afforestation to spread westward, as is the

Black Kite (*Milvus migrans*); and the Pochard (*Aythya ferina*) is moving into the centre of France from the east. All these changes require accurate quantitative assessment.

From the viewpoint of variety the most interesting mountainous or forested *départements*, and the least known, are the following: Isère, Hautes- and Basses-Alpes, Alpes-Maritime, Var (particularly the interior), Vaucluse, Drôme, Ardèche, Lozère, Tarn, Aveyron, Cantal, Corrèze, Aude, Ariège and Hautes- and Basses-Pyrénées. In Appendix 1(B) will be found a reference to certain mountainous regions about which ornithological information is almost or completely lacking. For water-birds the following *départements* are particularly recommended: Morbihan, Loire-Atlantique, Charente-Maritime, Vendée, Gironde, Landes, Indre, Haute-Saône, Haute-Marne and Hérault. Corsica, one of the gems of the Mediterranean, has been surprisingly neglected by ornithologists and nobody has yet attempted a serious study of two rare species which occur there—the Corsican Nuthatch (*Sitta whiteheadi*), which is known to nest in some forests, and Eleanor's Falcon (*Falco eleonora*), which perhaps breeds. On the writer's last brief visit the island was swarming with migrants, but very little organised work on migration has yet been done there.

Visitors to the south of France should perhaps be warned of two factors which frequently cause confusion. The first is the great brilliance of the sunlight, which plays tricks on eyes accustomed to the colour values in our relatively pale northern light. This is a particular problem with the many species of larks and chats, which in any case tend to pick up the red or yellow colours of the dusty ground in Provence. Gulls can also be very perplexing in the unaccustomed light. Many British visitors find it difficult to evaluate the colour distinctions between the Mediterranean race of the Herring Gull (*Larus argentatus michahellis*) and the darker British race of the Lesser Black-backed Gull (*L. fuscus graellsii*). The second factor which often confuses visitors to the south is the very long period embraced by spring migration. Finding the scrub of Provence in May alive with Pied Flycatchers (*Muscicapa hypoleuca*), or Redstarts (*Phoenicurus phoenicurus*), they are inclined to record them as "common in suitable habitats", without realising that they are only resting migrants. It is commonplace to see migrating swallows or terns still passing through while the local birds are already on eggs or even feeding young. A visitor to the Mediterranean in June may not give a second glance to what he assumes to be the familiar Common Gull (*L. canus*), unless he realises that at this time of year he is much more likely to see a Slender-billed Gull (*L. genei*). In other words nothing should be taken for granted at this, or indeed any, time of year and until more detailed information is available from France the distribution maps in the *Field Guide* should be taken only as a general indication. It should,

however, be noted that the maps in the latest French edition of this book are more accurate in respect of France than those in the earlier British and Continental editions.

Many British ornithologists have, of course, made excursions in France, but unfortunately few of them have made their notes available to the local ornithological societies. It will be of advantage to all if in future the need for international co-operation is recognised. In all cases the information should be presented in complete form, with scientific names, map references, altitudes, descriptions of habitats and so forth. However, because of the menace of unscrupulous egg-collecting, the exact localities in which rare breeding birds are found should not be given in any published report. Completed nest record cards will be particularly welcomed by the Groupe des Jeunes Ornithologistes. Mere lists of species observed, without other details, are of course of very limited interest.

The writer is indebted to Monsieur Raymond Lévêque and Monsieur F. Spitz for their valuable help in the preparation of this article.

APPENDIX I—AREAS IN FRANCE WHICH SHOULD PARTICULARLY REPAY STUDY IN THE BREEDING-SEASON

The localities in A that are marked with asterisks, as well as all in B and C, are ones about which little or no ornithological information has yet been published. Names of *départements* are shown in italics.

(A) *Marsh and pond areas*

*Valleys of rivers Somme, Canche and Authie (*Somme* and *Pas-de-Calais*)

*Ponds between Arras and Denain (*Pas-de-Calais*)

*Ponds of the Argonne from Ste. Menchould (*Marne*) to Bar le Due (*Meuse*)

Ponds of the Champagne Humide between St. Dizier (*Haute-Marne*) and Troyes (*Aube*)

Valleys of Champagne, notably the various heronries of the rivers Seine, Marne, Aube and Oise, and their tributaries

*Ponds of the Woevre from Damvillers (*Meuse*) to Toul (*Meurthe-et-Moselle*)

*Ponds and lakes of *Moselle*, particularly to the west of Sarrebourg

Forest areas bordering the Rhine in Alsace (*Bas Rhin* and *Haut Rhin*)

*Bogs and ponds south of the Vosges between Le Thillot (*Vosges*) and Lure (*Haute Saône*)

Swampy depressions throughout *Manche*

*Marshes of the Brière near St. Nazaire and the Lac de Grand'lieu (*Loire-Atlantique*)

Peat-bogs and ponds of Sologne (*Loire*, *Loir-et-Cher* and *Cher*)

Ponds of the Brenne to the east of Le Blanc (*Indre*)

Ponds of the Bourbonnais around Moulins (*Allier*)

*Ponds of the Bresse between Châlons-s-Saône (*Saône-et-Loire*) and Lons-le-Saulnier (*Jura*)

Poitevin marshes east of Niort (*Deux-Sèvres*)

*Marshes between Rochefort and Royan (*Charente-Maritime*)

Ponds of the Plaine du Forez north of St. Etienne (*Loire*)

Ponds of Dombes between Lyon (*Rhône*) and Bourg-en-Bresse (*Ain*)

*Ponds west of Champier (*Isère*)

*Ponds, marshes and bogs of the Landes (*Gironde* and *Landes*)

*Coastal ponds from Port Vendres (*Pyrénées-Orientales*) to the Camargue (*Bouches-du-Rhône*)

(B) *Mountainous areas*

Almost all the Massif Central (except the periphery and a few localities such as Causses, Forez and Mont-Dore) and the southern half of the Alpes. Very few and strictly local studies have been made in the Pyrénées, Corbières, the northern half of the Alpes and other mountain ranges.

(C) *Coastal areas*

Information on coastal breeding species is only fragmentary in *Nord, Pas-de-Calais, Somme, Vendée, Charente-Maritime, Gironde, Landes, Pyrénées-Orientales, Aude* and *Hérault*. Other coastal regions have been documented in only a few localities.

APPENDIX 2—SPECIES IN FRANCE ABOUT WHICH DATA ARE ESPECIALLY NEEDED IN THE BREEDING SEASON

(A) *Breeding areas almost unknown except in very few places*

Spotted Crake (<i>Porzana porzana</i>)	Pied Flycatcher (<i>Muscicapa hypoleuca</i>)
Baillon's Crake (<i>P. pusilla</i>)	Collared Flycatcher (<i>M. albicollis</i>)
Little Crake (<i>P. parva</i>)	Ortolan Bunting (<i>Emberiza hortulana</i>)
Common Sandpiper (<i>Tringa hypoleucos</i>)	

(B) *Limits of breeding ranges unknown*

Teal (<i>Anas crecca</i>)	Fieldfare (<i>Turdus pilaris</i>)
Short-toed Eagle (<i>Circus gallicus</i>)	Cetti's Warbler (<i>Cettia cetti</i>)
Little Bustard (<i>Otis tetrax</i>)	Marsh Warbler (<i>Acrocephalus palustris</i>)
Snipe (<i>Capella gallinago</i>)	Melodious Warbler (<i>Hippolais polyglotta</i>)
Collared Dove (<i>Streptopelia decaocto</i>)	Icterine Warbler (<i>H. icterina</i>)
Great Spotted Cuckoo (<i>Clamator</i> <i>glandarius</i>)	Orphean Warbler (<i>Sylvia hortensis</i>)
Short-eared Owl (<i>Asio flammeus</i>)	Lesser Whitethroat (<i>S. curruca</i>)
Pallid Swift (<i>Apus pallidus</i>)	Subalpine Warbler (<i>S. cantillans</i>)
Bee-eater (<i>Merops apiaster</i>)	Dartford Warbler (<i>S. undata</i>)
Roller (<i>Coracias garrulus</i>)	Bonelli's Warbler (<i>Phylloscopus bonelli</i>)
Grey-headed Woodpecker (<i>Picus canus</i>)	Willow Warbler (<i>Pb. trochilus</i>)
Middle Spotted Woodpecker (<i>Dendrocopos medius</i>)	Firecrest (<i>Regulus ignicapillus</i>)
Black Woodpecker (<i>Dryocopus martius</i>)	Meadow Pipit (<i>Anthus pratensis</i>)
Calandra Lark (<i>Melanocorypha calandra</i>)	Tawny Pipit (<i>A. campestris</i>)
Short-toed Lark (<i>Calandrella cinerea</i>)	Great Grey Shrike (<i>Lanius excubitor</i>)
Rook (<i>Corvus frugilegus</i>)	Lesser Grey Shrike (<i>L. minor</i>)
Willow Tit (<i>Parus atricapillus</i>)	Woodchat Shrike (<i>L. senator</i>)
	Red-backed Shrike (<i>L. cristatus collurio</i>)
	Rock Sparrow (<i>Petronia petronia</i>)

(C) *Suspected but not proved to breed in the localities indicated*

Fulmar (*Fulmarus glacialis*) in Normandic and Bretagne
 Osprey (*Pandion haliaetus*) in the Ardennes and Lorraine
 Spoonbill (*Platalea leucorodia*) on the estuary of the Loire and the Lac de Grand'lieu
 Tufted Duck (*Aythya fuligula*) in north-east France (only one known locality)
 Goosander (*Mergus merganser*) around the larger Alpine lakes
 Slender-billed Gull (*Larus genei*) on the Mediterranean coast
 Red-breasted Flycatcher (*Muscicapa parva*) in Alsace
 Aquatic Warbler (*Acrocephalus paludicola*) in eastern France
 Barred Warbler (*Sylvia nisoria*) in Lorraine and Alsace

Notes

Unusual death of Swift.—On 10th July 1959 a Swift (*Apus apus*) was brought to me completely covered with a mineral oil; despite careful efforts at cleaning it, it soon died. This bird had been picked up on the large playing field at Southfields County Secondary School at Gravesend, Kent, early that afternoon. The circumstances leading to its death provided something of a puzzle until I was reminded that a helicopter had been spraying crops adjacent to the playing field during the preceding days. Enquiries at this farm revealed that the type of spray in use had been copper sulphate, on potatoes. This is a non-oily solution but the ground on which the helicopter had been landing showed considerable fouling by oil, probably as a result of some leak. It seems reasonable to assume that the rotating blades of the helicopter had fanned this oil over a large area and so resulted in the complete coverage of this unfortunate bird.

R. G. FINNIS

Swallows taking winged insects from the surface of the sea.—For at least an hour on 13th September 1958, a calm and sunny day, I watched a small party of Swallows (*Hirundo rustica*) feeding on large numbers of winged insects which had blown on to the surface of the sea at Tresco, Isles of Scilly. Invariably each bird momentarily broke the surface of the water as it swooped down to take an insect and it seemed that they must be swallowing a small amount of salt water every time. I therefore carefully watched individual birds and found that some of them were feeding persistently in this way.

BERNARD KING

Request for information

Field investigations of the B.T.O.

Road deaths.—The objects of this new enquiry of the British Trust for Ornithology are to discover (a) approximately how many birds are killed in one year on the roads of Britain and which species are the chief victims, and (b) whether there is a peak at any one season and if the species vary with the time of year. Regular surveys of given stretches of road, preferably at least once a week, will be the most useful, but this does not exclude those who are not able to make observations over the full year, e.g. teachers and children whose journeys lapse during the holidays. The most complete data are likely to be provided by pedestrians and cyclists, but motorists who have time to spot and examine remains can also help. The enquiry will start on 1st May 1960 and continue until 30th April 1961. Full details may be obtained from the organiser, Miss T. Gompertz, Woodway, Pinner Hill, Middlesex.



Some reviews of
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British Birds

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MAY 1960



Comparative ecology of pigeons in inner London

By Derek Goodwin

INTRODUCTION

THIS PAPER DEALS with the ecology and some related aspects of the behaviour of pigeons (*Columba* sp.) in London. The observations were made between October 1946 and February 1960 in south-western, western, central and north-western areas of inner London. All remarks on relative and absolute numbers are based on observation and estimation. This will, it is hoped, gratify such readers as are as bad at mathematics and as prejudiced against statistics as is the author.

Three species of pigeon breed in inner London—the feral *Columba livia* (commonly known as the Feral Pigeon), the Woodpigeon (*C. palumbus*) and the Stock Dove (*C. oenas*). The two former are exceedingly abundant almost throughout the areas mentioned; the Stock Dove is very much less so, although it is certainly more numerous than most London bird-watchers to whom I have spoken imagine it to be. It is a common breeding species in Kensington Gardens, where, however, it is probably outnumbered at least twenty to one by breeding Woodpigeons. It breeds also in Hyde Park, Regent's Park, Holland Park, St. James's Park and (one certain record only) the Green Park; but in all these places its numbers, both absolutely and relatively to the numbers of breeding Woodpigeons, are smaller than in Kensington Gardens, and it has not so far been found nesting in any of the "squares".

The London population of Feral Pigeons is derived from domestic or semi-domestic stock, the old-time dovecote pigeon and the racing homer being the breeds most involved (see Goodwin 1954 for fuller discussion). The population is heterogenous. Compared with wild Rock Doves, most individuals tend to be much less muscular, to have proportionately larger ceres (called "wattles" by pigeon-fanciers

who use the term "cere" for the orbital skin), thicker bills and a less compact and not so broad-shouldered shape. Individuals with abnormally overgrown upper mandibles are not at all uncommon (at a rough estimate about one in two hundred are so afflicted) and, like the many crippled specimens, they often survive for several years.

The most obvious difference between London and country Wood-pigeons is the tameness of the former. It is not known to what extent, if any, this tameness has a genetic basis. Even in inner London there is much variation in the degree of tameness or wildness shown by different individuals and, to a lesser extent, by the same individual at different times. This is not true to anything like the same extent of the Feral Pigeons, none of which will fly out of a tree or off a building if a man walks below or near, as some of the London Woodpigeons sometimes do. The possibility that such very timid Woodpigeons may be transients or immigrants from outside London cannot, however, be excluded.

Quite a number of hook-billed or otherwise defective young Wood-pigeons are hatched and reared in London but they, like badly crippled specimens, seldom survive for long. They appear to be eliminated during the period of from one to several months each year that most adult and apparently all immature Woodpigeons spend away from the breeding areas in inner London. At this time they probably form part of the large numbers of Woodpigeons to be found feeding on acorns in such places as Hampstead Heath, Richmond Park and other peripheral areas (see Cramp 1957).

FEEDING AND FOOD-SEEKING

I do not think that London offers richer food supplies to pigeons than do most country districts. Natural foods seem rather more limited and, although large amounts of bread and other artificial food are fed to birds in London, this supply fluctuates considerably according to the weather and many other factors. The relative lack of predators and the generally harmless or friendly attitude of mankind towards them does, however, enable London's pigeons to exploit all possible feeding areas. Also, except in some of the busier streets and squares, they can feed whenever they like. This contrasts with the situation in the country where, because pigeons fear man greatly, his activities prevent some possible feeding grounds from being exploited at all and severely limit the times during which others can be used. This is true not only for pigeons but even more for some other birds, such as Herons (*Ardea cinerea*) and ducks (*Anas*, *Aythya*, etc.).

I have never seen Feral Pigeons feeding on privet hedges, small trees or shrubs; nor on the ground in dense wood or scrub cover

ECOLOGY OF PIGEONS IN INNER LONDON

TABLE I—FEEDING AREAS OF WOODPIGEONS (*Columba palumbus*) AND FERAL PIGEONS (*C. livia*) IN LONDON

	Large open spaces in parks	Small open spaces especially in small parks and "squares"	"Squares" without grass	Private "squares" with grass but without "bread"	River's edge at low tide	Busy streets
Woodpigeons	xxxx	xxx	x	xxx	x	
Feral Pigeons	xxx	xxxx	xxxx	x	xxxx	x
	Quiet streets	Inside stations	Lighted streets and stations at night	In large trees	In small trees and shrubs and on privet hedges	
Woodpigeons	x	x		xxxx	xxxx	
Feral Pigeons	xxxx	xxx	xx	x		

xxxx=very large numbers

xx=small numbers

xxx=considerable numbers

x=few individuals only

The term "bread" covers all artificial foods provided by the general public

other than that of small ornamental shrubberies in parks. Nor have I seen a Woodpigeon feeding in any narrow, gloomy, tree-less street running between high buildings; in a busy street with a considerable amount of traffic moving; or in an artificially lighted street, square or station *during the hours of darkness*. Apart from these exceptions there is a complete overlap of feeding grounds so long as one is considering *all* food-seeking time spent by *all* individuals of both species: some Woodpigeons come down to feed inside large stations, in fairly quiet streets or in small grass-less squares; some Feral Pigeons take buds from the peripheral branches of large trees or forage on the ground in open woodland on Hampstead Heath. If, however, one considers where most of the population of each species spends most of their feeding time then, as will be seen from Tables I and II, a different picture emerges and shows a considerable amount of ecological separation.

The Woodpigeon feeds much above ground, eating the buds, young flowers, young leaves and berries of a great many trees and shrubs, indeed of most (if not all) that do not have sticky or prickly buds. Prickly leaves or stems seem to have little or no deterrent effect so far as other parts of the plant are concerned. The flower buds and very young leaves of the hawthorn are eaten in quantity, as are the berries of the holly. In the parks it feeds much more on the open greensward, well away from such places as paths and tea booths, whereas the Feral Pigeons tend to concentrate in particular areas, commonly near the park entrances, where people bring food. Even

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TABLE II—FOODS TAKEN BY WOODPIGEONS (*Columba palumbus*)
AND FERAL PIGEONS (*C. livia*) IN LONDON

	"Bread" given or discarded by man	Buds, seeds and flowers of grasses	Seeds of knot-grass and plantain	Buds and flowers of elm and plane	Buds, flowers or young leaves of ash, lilac, hawthorn and privet
Woodpigeons	xxx	xxxx	xx	xxxx	xxxx
Feral Pigeons	xxxx	xxx	xxx	x	
	Berries of hawthorn and other trees	Acorns	Seeds of plane	Young grass shoots and clover leaves	Earthworms
Woodpigeons	xxx	xxx		xxxx	?xx
Feral Pigeons		x	x	?xx	

xxxx=taken in large quantities by most, probably all

xxx=taken in quantity by very many birds

xx=taken in small amounts or by relatively small numbers of birds

x=taken by only a few individuals

The term "bread" covers all artificial foods provided by the general public

Scientific names of plants mentioned: knot-grass (*Polygonum aviculare*), plantain (*Plantago* spp.), elm (*Ulmus* spp.), plane (*Platanus acerifolia*), ash (*Fraxinus excelsior*), lilac (*Syringa* spp.), hawthorn (*Crataegus monogyna*), privet (*Ligustrum vulgare*), acorns of oak (*Quercus* spp.), clover (*Trifolium* spp.)

in St. James's Park, with its small size and very dense pigeon population, this difference in feeding distribution of most members of the two species for most of the time holds good to some extent. For example, by the bridge or the tea stall one will commonly find forty or fifty Feral Pigeons being fed with perhaps two or three Woodpigeons, while a picnic party in deck chairs on the grass in a place less congested with humans will be giving hand-outs to perhaps nine or ten Woodpigeons and a pair or two of Ferals.

Woodpigeons appear to be much more ill at ease when feeding very close to others of their species than are Ferals. They also show some dislike of shouldering among a dense feeding flock of the latter species (although some individuals will habitually do so). This is not, I think, entirely due to territorial aggressiveness (or fear of it) by the Woodpigeons which hold territory in parks and squares where no Feral Pigeon does—since the individuals of winter feeding flocks of Woodpigeons in the country usually space themselves further apart than feeding Feral Pigeons or Stock Doves do.

Woodpigeons frequently find and come down to sources of artificial food through being attracted by the sight of Ferals feeding or alighting to feed, but they commonly avoid settling among any large and fairly dense aggregation of the latter. Thus, although I have often seen

Woodpigeons perched in the plane trees around Trafalgar Square (where one pair nests annually), I have only once seen one on the ground there and this was at a time when there were far fewer people and Feral Pigeons than are usually present.

Feral Pigeons tend to concentrate in rather circumscribed areas where much bread and other artificial food (varying from cheese and chocolate to peas and potato chips) is provided. When feeding on the flowers and seeds of grasses, plantain or knot-grass they spread out more over the greensward and small parties, pairs and single birds can usually be found seeking food well away from areas where most of their species are feeding. I agree with Gompertz (1957) about the relatively small distances that most Ferals in London travel to feed. I think, however, that some individuals do make longer flights to and from feeding grounds because in many places one can watch birds coming and going in small parties, pairs and singletons, flying very fast and straight, ignoring and ignored by the numerous groups of feeding Ferals over which they pass.

The Woodpigeon and the Feral Pigeon in London do not compete with one another for natural foods since those taken *in quantity* by both species are superabundant when available at all. Competition between the two for bread and other foods given by the public obtains to some extent, though less so than between individuals of the same species. Direct inter-specific aggression and fighting over food occurs only when a Woodpigeon and Feral Pigeon both wish to perch on a food-giving hand or on a small window ledge or similar place. On such occasions either species may succeed in dislodging its rival; though, if the two are fighting on a window sill, the Feral is more often the victor because of its specific behavioural adaptations for fighting on ledges.

The Woodpigeon is able to swallow larger objects than is the Feral Pigeon. Since many bird-feeding people habitually break bread into pieces which are too large for a Feral Pigeon to swallow though some of them can just be engulfed by a hungry and determined Woodpigeon, this gives some advantage to the latter species. Although such people are, apparently, incapable of grasping the connection between the size of the pieces of bread given and the difficulties the pigeons experience, many Woodpigeons are more perceptive and as soon as they see a Feral attempting to swallow an over-large morsel they hurry to it and try, often with success, to "take the bread from its mouth".

Such competition is, however, negligible as compared with that existing between London's pigeons and three other birds, the Black-headed Gull (*Larus ridibundus*), the Mallard (*Anas platyrhynchos*) and the House Sparrow (*Passer domesticus*). All these compete for food with the pigeons, particularly during cold winter weather. The most

serious competitor is, undoubtedly, the Black-headed Gull which is, however, present in large numbers only from October to March. This species is very quick to notice anybody giving food or the movements of other birds when being fed; it can quickly swallow very large morsels of food and will seize and carry away much larger pieces than it can swallow; it is bold and aggressive and will push into a close-packed feeding flock of Feral Pigeons or other birds, pecking "right, left and centre" in order to clear a way for itself and to intimidate any bird that has actually got food. It not only does this in the parks and along the embankments but habitually descends when food is put out on high window ledges, usually clearing the lot in a few seconds. Thus, the multitudinous (if individually small) hand-outs of food from the hundreds of people who put scraps on high window sills or roof-gardens are food sources for Feral Pigeons and often also for Woodpigeons, House Sparrows and Starlings during the late spring and summer; but in winter they supply only a few small crumbs, if anything at all, to these species. Low-storey window sills, on the other hand, are seldom visited by gulls, although pigeons and sparrows will come freely to them. The gulls also feed at times in some streets and small squares. Here, however, they are usually in lesser numbers and often nervous and hesitant, so that on the whole they take only a very small proportion of the food put out for birds in such places.

The methods and effects of competing Mallards are rather similar to those of the gulls, so far as the unlucky pigeons are concerned. Mallards, however, normally compete only with those pigeons that feed in St. James's Park or in the immediate vicinity of the waters in other parks.

The third competitor, the House Sparrow, is widespread in the parks and in most other places where pigeons are likely to be fed. It cannot force its way into a scrum of feeding Feral Pigeons, but it will very quickly and expeditiously dart down into any opening to seize and carry off a piece of bread. Owing to its smaller size and chubbier build it arouses the parental impulses of most bird-feeding humans more than do the Mallards, pigeons, gulls, etc. Hence these people often make some efforts to help the sparrow by throwing morsels direct to it or into places where it will have room and time to fly down and seize them, and the bird is sufficiently quick-witted to co-operate with all such efforts on its behalf. When such attempts are made to ensure that it gets the food given, the sparrow usually does so, unless there are many Black-headed Gulls present. Even when food is thrown down more or less haphazardly the sparrow often manages to secure an appreciable amount unless the pieces are too large for it to carry away.

Without having some idea of the extent to which the presence of

birds like gulls and ducks stimulates people to give food, it is impossible to know how seriously this competition from other species affects the numbers of pigeons able to subsist in inner London. So far as feeding on roofs and the higher window ledges is concerned, there can be little doubt that the Black-headed Gulls are entirely inimical to the pigeons. Elsewhere the position is less clear. In winter it is likely that fewer people would bring food to the parks or the embankments if there were no gulls or ducks but only pigeons to feed. But it is impossible to say whether the food involved would in such case be given to pigeons nearer home, used for human consumption, or otherwise disposed of.

London gives considerable scope for originality and initiative on the part of individual pigeons. In particular mutual recognition between individuals of *Homo* and *Columba* tends to be gratifying to the former and hence rewarding to the latter. It is surprising how quickly a pigeon, even one feeding in such a place as Trafalgar Square, will learn to recognise a man or woman who has singled it out on a few occasions for generous treatment. This mutual recognition often appears to play a big rôle in the survival of crippled or hook-billed Ferals.

There appears to be considerable difference between *linia* and *palumbus* in the manner in which the young learn to take bread and to come to human beings for food. Young Feral Pigeons follow the adults, particularly their father, to the feeding places and soon learn from their example to eat bread. By the time they are independent, or *very* soon after, almost all young Ferals have learnt to eat bread, and many of them to approach any human beings who show signs that they may give food. On the other hand, although a very few young Woodpigeons learn these things at a comparable age, the majority acquire this knowledge much later in life and most of them are, at the youngest, half way through their post-juvenile moult before they begin to connect the appearance of bread with the person giving it. The few young Woodpigeons that have early learnt to eat bread will, in their eagerness for food, press more freely than adults usually do among either their own kind or among Ferals; but most young Woodpigeons tend to avoid the close proximity of adults. This is probably due to the hostile behaviour of the latter.

Trespassing juvenile Woodpigeons seem to arouse even more hostility from territory owners than do other adults. Even a fledgling that has left the nest prematurely and blundered into a tree "owned" by a neighbouring pair will be attacked without mercy and pecked and clouted until it falls to the ground, in spite of its efforts to cling to the branches. Adult Woodpigeons will often attack recently fledged juveniles in situations where they tolerate the presence of other adults.

I think that parent Woodpigeons usually attack and drive off their young when they have ceased to feed them, but I have only seen proof—as distinct from circumstantial evidence of this—with a single pair.

The Stock Dove does not appear to feed to any extent in inner London. Even in Kensington Gardens, where it breeds plentifully, I have seldom seen one on the ground except when gathering nesting material. In spite of keeping a keen look-out for feeding Stock Doves I have only the following records. In the early spring of 1955 I twice saw a Stock Dove (almost certainly the same individual) in Kensington Gardens fly down to an area where Woodpigeons had been given bread and glean some of the minute crumbs that were left. In the same year I saw two Stock Doves on the ground in Kensington Gardens in an area that had been newly dug. They were looking for food although I did not actually see them find or eat anything. In the summer of 1957 a sickly juvenile, too starved and emaciated to fly, lived for some weeks in St. James's Park and came with the Feral Pigeons to people for food. I never saw it succeed in getting any of the bread except when I picked it up (it was so starved that its escape reactions were very slight indeed), put it and some food between my boots and fended off the Feral Pigeons and Mallards while it ate.

All the circumstantial evidence suggests that the Stock Doves of inner London fly right outside to feed. The most likely explanation of why they have not (so far) taken to feeding in town would seem to be because the Feral and Woodpigeons, between them, are fully exploiting all the food resources available. However, the fact that both Woodpigeons and Feral Pigeons have very greatly increased since the end of the war argues against this hypothesis. There are now very many more Feral Pigeons to be observed in inner London than there were in October 1946; the Woodpigeon has also increased greatly (see Cramp 1957) and it is probable that the Stock Dove has also increased in the same period. However, many of the natural foods taken by London Woodpigeons are not available to the Stock Dove, owing to its ground-feeding habits, smaller gullet and probably also to differing dietary preferences and digestive abilities. As far as natural foods are concerned the preferences of Stock Doves and Feral Pigeons appear to coincide (Goodwin 1954 and 1955), but in London the Feral Pigeons rely largely on "bread". In times of plenty for human beings the amount given is, to some extent, controlled by the number of pigeons present in any particular feeding place. Many more people will bring food to a flock of five hundred pigeons than will to a party of five. Hence it is probable that, even when the Feral Pigeon population was much smaller than it now is, there have been few times and places when food has been given in sufficient quantity over a period long enough to have provided *good* opportunity for a

Stock Dove to learn to eat "bread" and to come to people to get it. Nor does it seem likely that Stock Doves would be able to compete successfully for "bread" with Ferals in hard weather. It is possible, however, that sooner or later some individuals will make the attempt and if so, it is to be hoped that the success or failure of their efforts will be observed and recorded.

NESTING

So far as is known, all the Feral Pigeons breeding in London nest in or on buildings; most of the Woodpigeons nest in the branches of trees; and all the Stock Doves nest in holes in trees. I have observed one instance (and have seen two others in country districts) of a pair of Woodpigeons nesting in a tree-hollow such as a Stock Dove might use and London Woodpigeons quite often nest on ledges and in recesses of buildings.

I have never seen competition for a nest-site between *palumbus* and *livia*, but I have little doubt that the presence of a pair of the latter "already in possession" must often deter house-hunting Woodpigeons. The Woodpigeon seems rather more adapt at getting a nest built on a "sub-optimal" ledge. In one case a pair of Woodpigeons successfully built on a range of pipes beneath the shelter of a colonnade where a pair of Ferals had tried in vain to lodge material. After the young Woodpigeons fledged, the nest was taken over by the Ferals who reared brood after brood on it (adding fresh nesting material each time, of course) for the next three years, until it was destroyed by a Ministry of Works official.

Contrary to popular opinion, there is not a superabundance of nest sites for the Feral Pigeons. I have very seldom seen a place that looked to me as if it would make a reasonable nest-site for Feral Pigeons that did not already have a pair in possession. On the other hand, I have watched dozens of pairs trying to nest in obviously impossible places; and one or more pairs of Feral Pigeons frantically but vainly searching for nest-sites can be seen almost anywhere in London any bright morning in late winter, spring or early summer. Although it is not difficult to induce domestic pigeons to nest in boxes fixed on trees, London's Ferals appear never to nest in holes in trees or attempt to do so. I think the probable reasons are that, although they perch freely on trees in the parks and some of the squares, as soon as they get into a "nest-site seeking" mood they at once fly back to the buildings. At present, however, with the increasing destruction of old buildings, the construction of new ones of modern design (or lack of design) and the ever-increasing tendency to wire over old-established nest-sites in churches and elsewhere, the time would seem ripe for experimentation. At least two pairs of Feral Pigeons have been

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TABLE III—NEST DEPARTURES OF YOUNG WOODPIGEONS (*Columba palumbus*) AND FERAL PIGEONS (*C. livia*) IN LONDON

	January	February	March	April	May	June
Woodpigeons				x	xxx	xxxx
Feral Pigeons	x	x	xx	xxx	xxxx	xxxx
	July	August	September	October	November	December
Woodpigeons	xxxx	xxxx	xxx	xx		
Feral Pigeons	xxxx	xxxx	xxx	xx	x	x

xxxx=large numbers

xxx=considerable numbers

xx=small numbers

x=very few (less than 1 in 400 of year's total)

noted showing breeding behaviour on old Woodpigeons' nests in trees (S. Cramp in *London Bird Report 1957*, p. 24) and it will be interesting to see if any reversal to the (presumed) pre-Rock Dove ancestral habit of tree-nesting occurs in the future. Should *livia* ever take to nesting in tree holes in London, it would come directly into competition with *oenas*. The latter's breeding only in tree holes in London is, presumably, due to all possible sites in buildings being occupied by Feral Pigeons. In this connection it must be mentioned that pairs of both species like to have two nest sites which they can use alternately. Normally, they seldom use the same site for successive broods. However, the vast majority of breeding Feral Pigeons in London have to make do with only one nest site and in some areas there are very many pairs who have no nesting place in spite of constant searching.

As will be seen from Table III, *livia* has a much longer breeding season in inner London than has *palumbus*. Their reproductive peaks largely coincide, however, and only a very small minority of young Ferals are being reared during the period that Woodpigeons are producing no young. In both species the maximum numbers of young are produced in late spring and summer. At this period the supply of "bread" is at a maximum, due to the very much larger number of people having meals out of doors. Also there is then no serious competition from Black-headed Gulls, as only a few of these birds return to London in late June or July. It must be stressed that, although most Feral Pigeons show sexual and nesting behaviour in autumn, as soon as they have completed the main phase of their moult (which, in both species, usually occurs in September), the majority do not breed *successfully* until spring. The very few young fledging in winter are probably all the offspring of pairs whose individual circumstances are such that they have a regular daily supply of food that is not influenced by the factors affecting the majority. Feral Pigeons, and most domestic pigeons, kept at liberty and given a

constant and adequate food supply may begin to breed in October, but many, even in these conditions, do not lay till February or early March.

Some London Woodpigeons show keen interest in their old breeding sites, and in the old nests themselves if they remain in the tree, as early as the latter part of November. It is quite possible that a "lucky" pair with an assured food supply might breed successfully in winter. I have, however, never seen a recently-fledged young Woodpigeon, in London, before the latter part of April or after October.* In the country I have, on a few occasions, seen recently fledged young in November and (once) December, but never before mid-May in spring.

ROOSTING

The Woodpigeon in London roosts on trees; the Feral Pigeon on buildings. The large communal roosts of the Woodpigeon have been described elsewhere (Homes *et al.* 1957). The roosting habits of the Feral Pigeon have also been discussed previously (Gompertz 1957, Goodwin 1954), but a few aspects pertinent to the present paper and, perhaps, not sufficiently emphasised before must be mentioned here.

Both species show a strong tendency to roost in company, although this tendency is much weaker in breeding than in non-breeding birds and also appears to vary a good deal individually. Many pairs or even single specimens of *livia* do habitually roost alone (see Gompertz 1957), but I have seen even "driving" (and therefore certainly sexually active) pairs of Ferals coming in to communal roosts *not* in the immediate vicinity of their nest-sites. Similarly, even after taking up their breeding territories some Woodpigeons tend to form small communal roosts. Often these roosts centre about the territory of a pair who are actively hostile but do not succeed—till next morning—in driving the visitors away. Once nest-building begins, paired Woodpigeons often sleep together by themselves in the nest tree or one adjacent to it, but the male ceases to do so when incubation starts. It is highly probable that such pairs of Woodpigeons as nest inside large stations roost in the building during the nest-construction period at least. The difficulty of noticing and observing pigeons roosting in high, sheltered parts of buildings (compared with the ease with which they can be seen in bare trees) must, I feel, be borne in mind where the lack of records of Woodpigeons roosting on buildings is concerned. Paired Woodpigeons often sleep snuggled side by side on the same branch and paired Ferals are often in physical contact when roosting. But, except for its mate or still dependent young, no healthy adult of either species will tolerate another individual within (at least) pecking distance, even at a communal roost in winter.

* After the above was written, I saw a juvenile Woodpigeon in Holland Park in March 1960.

The two species do not in any way conflict with one another in their roosting. At some of the big communal roosts Woodpigeons suffer much from Carrion Crows (*Corvus corone*) which persistently swoop at them, putting them to flight again and again. Even although, as a rule, only from one to twenty Woodpigeons are disturbed at each swooping attack, it is surprising that roosts do not seem to be deserted from this cause. Around Trafalgar Square the Feral Pigeons come into competition with the hordes of roosting Starlings (*Sturnus vulgaris*) since both choose for preference the same type of roosting place—a ledge or niche sheltered from rain and wind. Individually, Feral Pigeons often win in contest with Starlings for a particular section of ledge. It is probable, however, that the Starling has an adverse effect on the larger bird. Many individual Feral Pigeons get badly fouled by Starlings' excrement falling on them in quantity while they roost. Such specimens usually seem in very poor health. Possibly they are usually weak, sick or particularly unenterprising individuals that have to use such unstrategic roosting sites, but, even allowing for this, the fouling must contribute to their wretchedness. Since the Starlings, even more than the pigeons, arouse the wrath of bureaucracy, they may also often be unwittingly responsible for measures being taken which cause Feral Pigeons to lose both roosting and nesting sites.

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Observations on the use by sea-birds of human fishing activities

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AT THE BEGINNING of August 1959 I sailed from Lochinver on the west coast of Sutherland in the motor fishing vessel *Olive Leaf* (Master: Campbell Thomson) and spent four days at sea. The majority of this time was passed seine-net fishing in the vicinity of the sub-oceanic islands of North Rona and Sula Sgeir, fifty miles north-west of Cape Wrath, the most north-westerly tip of the Scottish mainland.

Night and day, while fishing was in progress, the vessel was constantly attended by up to three hundred sea-birds of six different species seeking to gain food from our activities: Fulmars (*Fulmarus glacialis*), Gannets (*Sula bassana*), Great Black-backed Gulls (*Larus marinus*), Lesser Black-backed Gulls (*L. fuscus*), Herring Gulls (*L. argentatus*), and Kittiwakes (*Rissa tridactyla*).

It will give some indication of the proportions of the different species involved if I detail a count which I made at about 21.00 hours BST on 5th August near North Rona. An approximate total of 153 birds was made up of about 110 Fulmars, 6 Gannets (3 immature), about 90 Great Black-backs (3 immature), 2 Lesser Black-backs and 5 Herring Gulls (2 immature), and about 40 Kittiwakes (1 immature). Details of a second count are given in Table I. It can be seen that the number in immature plumage was negligible and it seems reasonable to assume that the majority of the birds were from the breeding populations of North Rona and Sula Sgeir. This view is supported by our catching of a Fulmar which had been ringed on 4th June the previous year on North Rona (ring number 302.3173, age unknown).

The food made available by our activities fell into two distinct categories: gut from the saleable fish, and unsaleable fish. All saleable fish caught were gutted at sea, the gut being thrown overboard as each one was cleaned. Gut here includes both liver and entrails. I was told that trawlers—as opposed to seine-netters—collect the liver and extract the oil on board before throwing the rest away.

The quantity of gut thrown overboard varies directly with the amount of fish caught. My skipper carefully estimated that for each seven-stone box (98 lb.) of gutted fish landed, at least one stone (14 lb.) of gut had gone overboard. Some indication of the total amount involved can be got from the fact that after the second part of our voyage (we had returned to port for a few hours on the night of 4th/5th August and I finally disembarked on the 6th) we landed 119 boxes of saleable fish—103 of Haddock (*Gadus aeglefinus*), 15 of skate (*Raia* sp.) and one of Plaice (*Pleuronectes platessa*). This meant that, during a total of 24 hours' fishing in two days, rather over two hundredweight of gut (238 lb.) had been thrown overboard.

Gut made available in this way was commonly eaten by the Fulmar and the four species of gull, and once by a Gannet. To gain a preliminary idea of how much went to each species I traced the fate of a sample of a hundred pieces of gut from the time each left a fisherman's hand until it was eaten or sank (see Table I). The ship at the time this sample was taken was moving at eight knots, as she regularly did when setting the net or moving to new grounds. It was particularly noticeable, however, when the net was being hauled in and the boat was near-stationary, that all the birds except the Fulmars sat on the

water twenty or thirty yards away; these last came right alongside and ate almost all the gut, losing only a very little to a few intruding Kittiwakes. Then when the boat gathered speed again the gulls would rise from the water, a few Gannets would appear, and these birds would constantly fly round the ship coming up head-to-wind on the gutting side and hover or glide there as long as possible, diving for the food as it dropped to the surface. In this situation (boat *moving*) the gulls and Gannet had a distinct advantage over the Fulmars which had to half-fly and half-paddle over the water from a surface position. The four gulls also had another advantage in that they could alight on the gunwale.

TABLE I—THE FATE OF 100 PIECES OF FISH GUT THROWN OVERBOARD FROM A MOVING FISHING VESSEL NEAR NORTH RONA, SCOTLAND, AT ABOUT 09.00 HOURS BST ON 6TH AUGUST 1959

Approximately 300 birds were around the ship at the time. Of the 100 pieces of gut thrown one by one, 5 were lost and the remaining 95 were eaten by birds as set out below. Five pieces were divided, in each case by a Fulmar and a Great Black-backed Gull. The two immature *fuscus/argentatus*, which for convenience are included in the Herring Gull total, were not seen to eat.

	Number present	Pieces eaten
Fulmar (<i>Fulmarus glacialis</i>)	ca. 155	39½
Gannet (<i>Sula bassana</i>)	5 (3 imm.)	1
Great Black-backed Gull (<i>Larus marinus</i>) ..	ca. 90 (5 imm.)	32½
Lesser Black-backed Gull (<i>Larus fuscus</i>) ..	1	3
Herring Gull (<i>Larus argentatus</i>)	15 } (2 imm.)	14
Kittiwake (<i>Rissa tridactyla</i>)	ca. 35 (1 imm.)	5

The second category of food was the unsaleable fish thrown overboard. Unlike the gut the quantity of this bears no direct relation to the amount of saleable fish caught, some hauls being very much "cleaner" than others, depending on the nature of the bottom, the district and the season. It may be worth mentioning that during the second part of the voyage, when 119 seven-stone boxes of saleable fish were landed, a careful estimate showed that at least 8 seven-stone boxes of unsaleable fish were returned to the sea.

All were dead when discarded and except for the three heaviest species—which were too large for birds to eat anyway—they sank quite slowly. The vast majority of this fish, weight for weight, consisted of gurnets (*Trigla* sp.) 7-9 inches long, most of which were eaten by Great Black-backed Gulls, some by Gannets, and a few by the two other *Larus* gulls, while only a very few sank. Small flat fish 6-8 inches long (probably *Solea variegata*) were sometimes eaten by the three *Larus* gulls and by Gannets, but many sank. Three cuttlefish

(*Sepia* sp.) were tackled by Great Black-backed Gulls and Fulmars. The three larger species of fish mentioned were Larger Spotted Dogfish (*Scylliorhinus stellaris*), another dogfish (probably *Mustelus* sp.) and an occasional Angler Fish (*Lophius piscatorius*).

OTHER SPECIES

In conclusion, it may be of interest to make brief mention of the other sea-birds which I noted during the voyage, though these were not taking the food thrown overboard. Up to twenty-five Storm Petrels (*Hydrobates pelagicus*) were seen round the boat each day. Two Manx Shearwaters (*Procellaria puffinus*) were seen on 4th August, and a distant bird probably of this species on the 6th. Following a probable Great Shearwater (*P. gravis*) on the 5th, a much closer bird was clearly identified the next day. A Sooty Shearwater (*P. grisea*) alighted within ten yards of the boat on the 3rd and another was spotted two days later. Numbers of Shags (*Phalacrocorax aristotelis*) were seen in the vicinity of Sula Sgeir, and Great Skuas (*Catharacta skua*) appeared as follows: one on 3rd, two on 4th and one on 5th. Puffins (*Fratercula arctica*) were the only other sea-birds seen.

Migrants at station "Juliett" in September 1959

By Ivor McLean

Meteorological Office, Air Ministry

and Kenneth Williamson

Migration Research Officer, B.T.O.

THERE WERE several interesting occurrences of land-birds (including waders and terns) at O.W.S. *Weather Observer* at station "Juliett" in the east Atlantic Ocean, near latitude $52^{\circ}30'$ N. and longitude 20° W., between 13th and 29th September 1959. This position is 400 miles west of Co. Kerry, Ireland, and 800 miles south of Iceland.

During the first week of the period an anticyclone covered the north-east Atlantic, and the birds are likely to have been drift-migrants from south-western Britain or north-western France, carried out to sea by the light easterly and south-easterly winds. It is possible that the Meadow Pipits of the 16th were displaced during a south-eastwards migration from Iceland to the British Isles when coming within the easterly airflow on the south side of the high: their distressed condition points to a long sea-crossing. It is conceivable that the Turnstones could have crossed the Atlantic, since they appeared on dates when "Juliett" was on the southern periphery of depressions centred in Denmark Strait, and exposed to a fresh westerly airstream. With the

anticyclone situated to east and south of "Juliatt" at the end of the month, the few drift-migrants seem likely to have originated in the Biscay region of France or even northern Spain.

The time of arrival of each bird is given in G.M.T. following the date, together with a note of the weather and visibility. The wind-direction is shown by the number of degrees declination from North, together with the speed which is in knots.

SYSTEMATIC LIST

Kestrel (*Falco tinnunculus*). 13th September, 07.30 hours, cloudy, good visibility, wind 110°/20: a female, reluctant to fly when disturbed, spent most of its time on the balloon shed deckhead before leaving overnight on the 13th/14th. 15th September, 13.10 hours, cloudy, moderate visibility, wind 080°/19: a female circled for about an hour before alighting on an anchor; it was very easily disturbed and reluctant to settle, but made the starboard anchor its roosting-place and favourite day-time perch for an "off-passage" stay which lasted till 14.00 hours on the 18th; during this time it killed a number of small birds (see FEEDING HABITS).

Turnstone (*Arenaria interpres*). 19th September, 14.25 hours, cloudy, good visibility, wind 200°/20: after spending most of its time in the balloon shed this bird left overnight on the 20th/21st; it weighed 70.34 gm. at 18.45 hours on the 19th, a very low weight for this species (usually 100-130 gm.). 23rd September, 17.37 hours, cloudy, good visibility, wind 220°/21: one circled the ship for ten minutes.

Phalaropes (*Phalaropus* sp.). In all, 26 were seen and these are listed in Table I. The only one seen at close quarters had the head slender and delicate, with a very fine bill.

TABLE I—PHALAROPES (*Phalaropus* sp.) AT STATION "JULIETT"
SEPTEMBER 1959

Date	Time GMT	Wind	Weather	Visi- bility	No. of birds	Remarks
10	11.05	170°/09	c	v. good	1	Feeding close to ship till 11.29*
	11.19	170°/09	c	v. good	3	Flew S
16	14.00	070°/16	bc	good	3	Flew SSW
18	10.00	calm	b	v. good	3	Flew NW
	14.00	calm	b	v. good	12	Feeding at mod. distance for 45 mins.
25	14.00	290°/25	c	v. good	1	Feeding fairly close*
28	14.00	350°/10	c	v. good	1	Feeding at mod. distance*
30	14.00	230°/23	bjp	v. good	2	Feeding close to ship*

*Feeding in association with Wilson's Petrels (*Oceanites oceanicus*)

MIGRANTS AT "JULIETT" IN SEPTEMBER 1959

Terns (*Sterna* sp.). Observations of terns are given in Table II. An immature Arctic Tern (*S. macrura*) perched on the stern gunwale at 07.20 hours on the 18th and was picked up after a quiet approach.

TABLE II—TERNs (*Sterna* sp.) AT STATION "JULIETT", SEPTEMBER 1959

Date	Time GMT	Wind	Weather	Visi- bility	No. of birds	Remarks
10	11.16	170°/09	c	v. good	1	Circling for 10 mins., flew S
	18.00	100°/13	bc	good	1	Mobbing imm. gulls, flew E
11	10.00	160°/14	b	v. good	1	In vicinity 20 mins.
	19.07	100°/13	bc	good	2	In vicinity 15 mins.
16	15.00	060°/16	c	good	2	Mobbing Kestrel for 15 mins.
18	07.20	calm	b	v. good	1	Caught while resting on gunwale
	10.00	calm	b	v. good	4	Circling for 20 mins.
	14.00	180°/02	b	v. good	1	Circling for 10 mins.
30	14.00	230°/23	bjp	v. good	1	Circling near ship
2 Oct.	10.00	160°/16	cir	v. good	1	Flying S

Wheatear (*Oenanthe oenanthe*). 15th September, 15.03 hours, fair, moderate visibility, wind 080°/19: this bird, which probably fell prey to the second Kestrel, was active and restless at first, but less so early on the 16th, when it was last seen at 10.20 hours. 28th September, 04.50 hours, rain, moderate visibility, wind 220°/16: this flew into the balloon shed, and later into an alleyway where it was caught, only to escape in the meteorological office, where it stayed till 12.55 hours on 3rd October, when we were approaching the Irish coast at latitude 53°55'N., longitude 12°38'W., in fine, sunny weather. 29th September, 17.40 hours, rain, visibility good, wind 180°/28: this bird was probably blown or washed away during a severe gale overnight.

Willow Warbler or Chiffchaff (*Phylloscopus trochilus* or *collybita*). 17th September, 16.49 hours, fair, visibility very good, wind 050°/05: a very active bird, last seen at 19.00 hours.

Garden Warbler (*Sylvia borin*). 17th September, 14.00 hours, cloudy, very good visibility, wind 060°/05: very active, but approachable; killed by the Kestrel at 17.15 hours.

Spotted Flycatcher (*Muscicapa striata*). 17th September, 10.05 hours, fair, visibility very good, wind 050°/05: caught at 19.10 hours, this bird was of quite good weight, 10.97 gm. (wing 84 mm., tail 54 mm.); it was last seen at 19.40 hours.

Red-breasted Flycatcher (*Muscicapa parva*). 16th September, 19.35 hours, cloudy, good visibility, wind 090°/10: a female or young bird,

it first entered the balloon shed, and later at 02.00 hours on the 17th the W/T office, where it was caught; its weight was good at 7.95 gm. (wing 67 mm., tail 49 mm.); it was last seen at 06.30 hours on the 17th.

White Wagtail (*Motacilla a. alba*). 13th September, 10.32 hours, cloudy, good visibility, wind 110°/20: this female died at 18.00 hours on the 15th, weighing only 11.27 gm., or rather less than half the normal autumn weight of the species.

Yellow Wagtail (*Motacilla flava*). 29th September, 14.55 hours, rain, good visibility, wind 060°/18: this bird was probably washed or blown away during a severe gale overnight.

Meadow Pipit (*Anthus pratensis*). There was a movement on 16th September, as shown in Table III. The first to die from exhaustion weighed 12.77 gm. (wing 82 mm.) and the second 12.39 gm. (wing 83 mm.) soon after death: these weights are a little more than half the normal for Meadow Pipits before migration. A bird which settled aboard at 08.57 hours on 13th and left during the night weighed 13.29 gm. at 19.05 hours, and was active and restless.

TABLE III—MEADOW PIPITS (*Anthus pratensis*) AT STATION "JULIETT"
SEPTEMBER 1959

Date	Time GMT	Wind	Weather	Visi- bility	No. of birds	Remarks
16	09.47	060°/18	c	good	1	Killed immediately by Kestrel
	10.00	060°/18	c	good	1	Killed at 13.40 by Kestrel
	14.00	070°/16	bc	good	1	Killed at 16.30 by Kestrel
	15.00	060°/16	c	good	1	Died of exhaustion 09.55 on 17th
	16.40	080°/14	bc	good	3	1 killed by Kestrel 07.30 on 17th 1 died of exhaustion 14.00 on 17th 1 probably killed by Kestrel on 18th

FEEDING HABITS

The Kestrel which remained "off-passage" at the ship from 15th-18th September killed and ate at least five, possibly seven, migrants. It would circle the ship, and when it spotted a small migrant out in the open would come in very fast and try to pick up its victim from the deck. Four Meadow Pipits and a Garden Warbler were killed in this way, and on two occasions it was seen to pluck and eat its prey on the wing. A pellet was found on the anchor where it roosted. This is the second case to have come to our notice of a bird of prey remaining

"off-passage" at a weather-ship, the first concerning a Merlin (*Falco columbarius*) at station "India" (*Brit. Birds*, 51: 157-158).

From 15th-17th September a number of moths were to be seen around the ship's lights at night: probably these were migrant Silver Y moths (*Plusia gamma*) brought to "Juliett" by the east and south-east winds. Several of the migrants were seen to catch and eat these moths, including the two flycatchers and the Willow Warbler or Chiffchaff.

The Wheatear of the 28th caught moths and flies during its five-and-a-half days' stay and showed no interest in mealworms, though it drank water. The Turnstone of the 19th ate mealworms readily, and one of the Meadow Pipits took dried flies. The first Kestrel ate scraps of raw meat and mealworms put out for it, and the White Wagtail of the 13th pecked at scraps of meat and took water.

SUMMARY

(1) In the second half of September 1959 ten species of land-birds, drifted by anticyclonic easterly and south-easterly winds, occurred at a weather-ship 400 miles west of Ireland. Records of migrant terns and phalaropes are also given.

(2) One Kestrel remained "off-passage" for three days, preying on small birds; several of the latter caught and ate migratory moths, and a few took mealworms.

(3) A White Wagtail and two Meadow Pipits which died of starvation following exhaustion were about half the normal weight for these species.

The National Collection of Nature Photographs and some examples of the best recent work by British bird-photographers

(Plates 25-32)

IN 1955, THE NATURE CONSERVANCY, with co-operation from the Zoological Photographic Club and the Nature Photographic Society, started a National Collection of Nature Photographs to consist of outstanding pictures of birds (photographed "wild and free") and other animals and plants.

An Advisory Committee was established to select photographs for the National Collection and to advise the Conservancy generally on related matters. The members of the Committee are Eric Hosking (Chairman), H. R. Lowes, John Markham, S. Beaufoy, Miss Anne Jackson, R. H. Hall and W. S. Pitt. The pictures are divided into three categories: a national collection of the highest standard of

contemporary photography; an historical collection; and a working collection especially illustrating the natural history of Nature Reserves.

The general aim is to build a basic collection of a high standard to cover as many as possible of the species found in Great Britain. The collection is constantly being added to, and those photographers who have been approached have generously contributed prints of the selected photographs.

The Conservancy have offered facilities and help to experienced photographers on their Reserves, subject, of course, to any essential restrictions regarding rare birds or scientific experiments.

The loss or destruction of many valuable and irreplaceable collections of negatives and prints of wild life taken by early photographers has caused considerable concern amongst naturalists, photographers and the Conservancy. British bird-photographers led the world in their achievements and this makes it all the more unfortunate that so few of their most remarkable prints have survived (some of them, although over 60 years old, still equal in quality the best of the present-day work). None of the unique originals of the famous Kearton brothers, C. W. R. Knight, G. A. Booth and others, who were among the first in this field, has been traced for the National Collection; only one or two prints—and even those are not the best—remain of such pioneers as R. B. Lodge, Riley Fortune, Bentley Beetham and O. J. Wilkinson. However, fuller records are fortunately available of the earlier work of some other photographers like Arthur Brook, Alfred Taylor and Stanley Crook, not to mention Oliver G. Pike whose unique sequence of a Cuckoo (*Cuculus canorus*) laying in the nest of a Meadow Pipit (*Anthus pratensis*) was described by him and illustrated recently in this journal (*Brit Birds*, 52: 226-228, plates 43-44).

In spite of the keenness and enthusiasm of these bird photographers and their modern successors, many of the birds on the British list remain entirely unrepresented in the National Collection, e.g. Barnacle, Brent and Canada Geese (*Branta leucopsis*, *bernicla* and *canadensis*), Bean and White-fronted Geese (*Anser arvensis* and *albifrons*), and Great and Sooty Shearwaters (*Procellaria gravis* and *grisea*). Even so, the Collection now numbers over 900 photographs, of which some 500 are of birds.

This issue contains a selection of photographs (plates 25-32) which are among the best taken in the past year or two and which represent something rather different from our normal series. It has always been our policy to publish photographs for their ornithological value rather than for their aesthetic properties or their technical excellence. In the words of the late Harry Witherby (*Brit. Birds*, 50: 214), we aim to publish "photographs not merely for the sake of a portrait but for the sake of demonstrating some point (of scientific interest)".



PLATE 25. Curlew (*Numenius arquata*), Argyll, June 1959 (J. T. Fisher) (page 219)



PLATE 26A. Merlins (*Falco columbarius*) in crow's nest, Derby, June 1959 (H. A. Hems)

PLATE 26B. Hooded Crows (*Corvus corone cornix*), Shetland, June 1959 (L. Anger)





PLATE 27A. Snipe (*Capella gallinago*), Norfolk, August 1959 (C. C. Doncaster)

PLATE 27B. Shelduck (*Tadorna tadorna*), Lancashire, June 1958 (Guy B. Farrar)



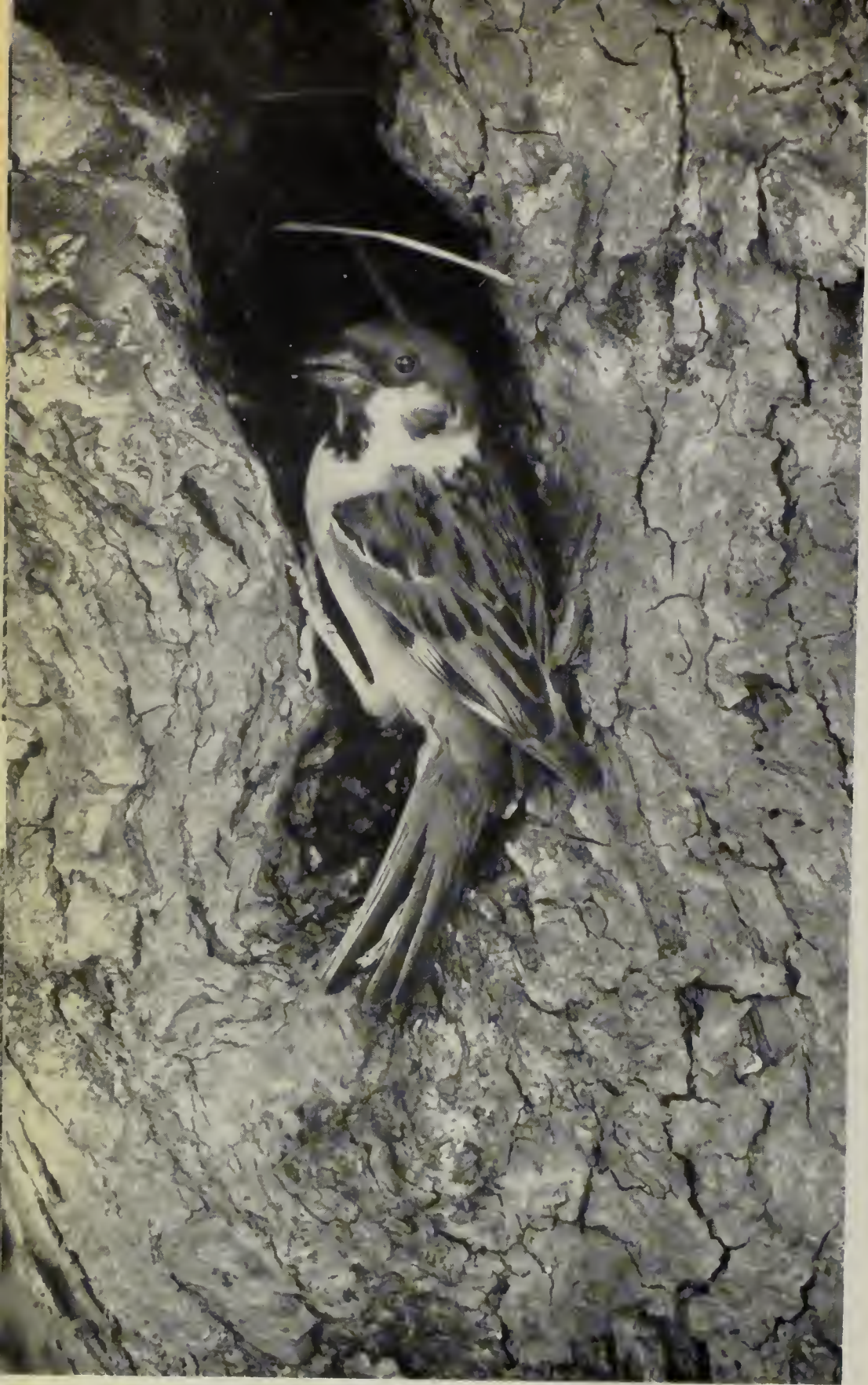


PLATE 28. Tree Sparrow (*Passer montanus*), Essex, August 1955 (R. E. Hitchcock)



PLATE 29. Nuthatch (*Sitta europaea*), Yorkshire, May 1959 (Morley Hedley)





PLATE 31. Male Linnet (*Carduelis cannabina*), Lincolnshire, July 1959 (R. H. Hallam)

ATE 30A. Reed Buntings (*Emberiza schoeniclus*), Yorkshire, July 1959 (G. A. Binks)

ATE 30B. Roseate Tern (*Sterna dougallii*), Anglesey, July 1959 (D. A. P. Cooke)



PLATE 32. Female Cirl Bunting (*Emberiza cirlus*), Devon, August 1954 (E. H. Ware)

Now, however, once each year, we are proposing to publish a selection of the best contemporary work by British bird photographers, with the main aim of keeping a permanent record in one journal. The next decade or two may well show great advances in photographic materials and techniques, and it will be of no little interest to be able to compare annual selections in this way. At the same time, this selection will enable our readers to see some of the more outstanding photographs of British species which are normally never represented in this journal, some of them indeed not being published anywhere. We shall also use this annual feature as a means of encouraging the work of some of the less well known and younger bird photographers; so much so that in future this factor will have a bearing on the final selection.

The photographs reproduced now are eleven of the best from those shown in the 1959 Autumn Nature Exhibition of the Royal Photographic Society. Future selections will be taken not only from this source but from many others. The final choice will be made by our photographic editor, Eric Hosking. We hope that good photographs which he is not likely to see in any other way will be submitted for his consideration and that all bird-photographers who are asked will collaborate by letting us have their prints. These should be about 8 inches by 6 inches in size with a glossy finish; the address of the photographer should be clearly written on the back with the name of the bird, the date and the county (or, if abroad, the country) in which it was taken.

Notes

Broken eggs in nests of Sparrowhawk.—I can add two records to Dr. D. A. Ratcliffe's list (*Brit. Birds*, 53: 128-129) of broken eggs of Sparrowhawks (*Accipiter nisus*), one of them showing that the phenomenon goes back some time. On 7th June 1927, near Fleet Pond, Hampshire, my father, Col. R. B. Campbell, and I found a Sparrowhawk's nest in a Scots pine (*Pinus sylvestris*). Underneath was a broken egg and in the nest two fresh ones. On 20th June 1953 I found a nest in a birch (*Betula* sp.) near Cothill, Berkshire. It contained one heavily dented egg with congealed contents and one with loose contents, which proved to be addled. They were warm and the bird flew round calling while I was at the nest. I did not look for broken eggs below, where there was thick ground vegetation.

BRUCE CAMPBELL

Rubber bands in Puffin's stomach.—On 23rd January 1960 a first-winter Puffin (*Fratercula artica*) was found dead on the beach at Hornsea, Yorkshire. The corpse was in good condition, without any sign of oiling, and was forwarded to Mr. Alfred Hazelwood at the Bolton Museum. On dissection it was found to be a female and there were the remains of a number of rubber bands in the stomach. The bird had apparently died of acute gastritis as a result of these. It was otherwise undamaged and not drowned as so often happens with diving birds which are in impaired circumstances. There are references in the literature (for example, *Brit. Birds*, 42: 52; 43: 31; 44: 15) to rubber being found in the castings of ground-feeding or scavenging birds like Rooks (*Corvus frugilegus*), Jackdaws (*C. monedula*), Starlings (*Sturnus vulgaris*) and Black-headed Gulls (*Larus ridibundus*), but I cannot find any similar record involving an essentially marine species like the Puffin. How and where such a bird could have picked up the rubber bands is a mystery.

G. R. BENNETT

Bee-eaters diving into water.—In view of A. J. Tree's recent note (*Brit. Birds*, 53: 130-131) on European Bee-eaters (*Merops apiaster*) diving into water, the following observations may be of importance. On 7th July 1958, whilst by the Alwand River at Khanaqin in eastern Iraq, I saw two Blue-cheeked Bee-eaters (*M. superciliosus*) gliding a foot or two above the water and constantly dropping down to pick small insects, almost certainly Diptera, from the surface. On 25th July a number of these birds were seen behaving in an identical manner, and on several occasions various individuals dived into the water so that the entire head and under-parts were immersed. Then on 31st August 1958, in the same locality, six European Bee-eaters were watched behaving in a like manner. Sometimes they dived into the water with considerable force so that the head and most of the body were submerged, and when they came up some type of insect could be seen in the bill. In these cases the prey was obviously being taken from beneath the surface. One or two birds, however, merely glided along with only the bill immersed, apparently drinking in the same manner as the Swallow (*Hirundo rustica*).

BRYAN L. SAGE

Red-rumped Swallow in Kent.—In the late afternoon of 28th August 1959 I was watching many thousands of Sand Martins (*Riparia riparia*), Swallows (*Hirundo rustica*) and House Martins (*Delichon urbica*) feeding over the clay-pits at Murston, near Sittingbourne, Kent, when I saw a Red-rumped Swallow (*H. daurica*). During the next hour I watched this bird at ranges down to about 20 feet and noted the following points:

Nearer Swallow than House Martin in size. Crown, back, wings and tail blackish-purple (as in Swallow, rather than black as in House Martin). Sides of head and band over nape brown. Rump and entire under-parts pinkish-buff. Tail deeply forked with streamers; no white markings.

At a distance it most resembled a House Martin with pinkish-buff rump and under-parts, and was surprisingly readily picked out. Its behaviour was generally similar to that of the other Hirundines. It fed almost entirely on insects just above the surface of the water, not venturing over the reed-beds where many of the Sand Martins were feeding.

J. J. M. FLEGG

Male Rook covering the eggs.—In March 1959 two pairs of Rooks (*Corvus frugilegus*) had nests with eggs in a large and leafless beech at Mount Merrion, Co. Dublin. At about 10.30 a.m. on 25th March the two females were incubating and the two males were each sitting about a yard away from their respective nests. One of the males was cawing loudly and vigorously when his mate suddenly flew off, probably to feed or drink as she wiped her bill carefully when she came back. The cock continued to call for a few seconds after her departure and then deliberately hopped sideways down the branch to the vacated nest, in which he then sat so that only his beak and tail were visible. The hen arrived back at the nest about two minutes later, whereupon the cock got out of it and stood on the branch beside. The hen then sat on the nest again and was soon afterwards fed by her mate.

There were no other Rooks' nests within a quarter of a mile of these two and only the four birds were in the tree. The second pair did not move at all during the short period concerned and I was watching from a distance of only about 30 yards. Thus there is no doubt that the male did cover the eggs while the female was away and this seems of interest in view of *The Handbook's* statement that incubation is by the female Rook alone.

CIARAN P. KANE

[We showed this note to Dr. C. J. F. Coombs who is making a particular study of this species. He has commented as follows: "Two things are most unusual about this observation. One is of course the apparently definitely established fact that the male covered the eggs, instead of just staying close to the nest as he usually does even when the female moves a few feet away from it. No less surprising, however, is the fact that the female went right away to feed or drink. The female Rook does not usually leave the area of the nest while she has eggs, though she will go a few yards to stretch and defaecate, often after the male has brought food. In fact, the female normally starts foraging for herself only when the male can no longer provide enough food for her and her young. Then she gets hungry and goes off for

her own supplies, but if there is ample food and perhaps only one youngster she may not need to do this at all and may try to brood the young right to the end. Thus it seems to me that in the incident described by Mr. Kane the real abnormality may have been the fact that the female went away and left the eggs unattended, with the result that this released in the male a response that is normally only possible for the female. Such behaviour is certainly uncommon and I do not know of another record of a male Rook sitting on the eggs, but a great many actions normally associated with one sex can be carried out by the other if conditions favour a reversal of roles. The male Rook does more than half of the stick part of nest-building and just under half of the lining part; and when the nest cup is being formed there are actions by him as well as by the female which might be associated with broodiness. I also once saw a male Rook get into an unattended nest of newly-hatched young and, after stirring them with his bill, lower himself on to them; but he was driven off almost at once."—Eds.]

Nuthatch feeding on a fungus.—On 10th January 1960, with D., K., and P. Carr, I watched a Nuthatch (*Sitta europaea*) feeding on a fungus in Windsor Great Park, Berkshire. Several clumps of the fungus, which we identified as oyster mushroom (*Pleurotus ostreatus*), were growing on the trunk of a dead beech. The Nuthatch settled on top of one of the large fruit-bodies and pecked vigorously at the cap an inch or more from where it touched the tree. Having broken through the cap, it then fed repeatedly on the fleshy mass inside.

From our close observation point—we were standing only a few yards away with the bird more or less at eye-level—we were quite satisfied that the fungus was actually being eaten and, on going up to it afterwards, we could find no evidence that it had harboured any insects or their larvae. Further, because some fungi contain large numbers of insect larvae, and since other people particularly queried this point, D. Carr and I returned to the area four weeks later (the Park having been closed in the meantime) to check this question and to make sure of the species of fungus. By then all the fungus had fallen from that particular beech and was decaying on the ground beneath. Amongst the fruit-bodies which were not too badly decomposed we found one in which we were able to see two very small larvae. However, two clumps of the same fungus on a stump in a less exposed position were still in as good a condition as those seen on 10th January and we could find no larvae in them. C. M. VEYSEY

Song Thrushes feeding on sandhoppers.—In September 1959 I stayed five days on St. Agnes, Isles of Scilly, and during this time regularly saw Song Thrushes (*Turdus philomelos*) feeding on the myriads

of sandhoppers (*Talitrus locustra*) which covered much of the wet sand and tide-wrack on the shore. They sometimes even contested the right to feed on these crustaceans with Turnstones (*Arenaria interpres*), Dunlins (*Calidris alpina*) and other waders. I can find no reference to this habit in the literature, but residents of St. Agnes informed me that it is a long established practice there. I also noticed Song Thrushes behaving in the same way on the adjoining island of Gugh when sandy areas were exposed at low tide. BERNARD KING

Field characters of the Icterine Warbler in late summer.—Lemon-yellow under-parts are generally accepted as a conspicuous character of the Icterine Warbler (*Hippolais icterina*) at all times of the year, so it may be of interest to record that on 14th August 1958, at Hillerød in Sjaelland, Denmark, I had good views of one which showed no trace whatsoever of yellow. I watched it for several minutes at ranges down to ten feet. The under-parts were a uniform pale greyish-brown and the upper-parts darker and more earth-coloured. Had it not been for the brilliant blue-grey legs, I should have been tempted to identify this bird as an Olivaceous Warbler (*H. pallida*).

Similarly, I watched a family of Icterine Warblers for a total of nearly two hours on 5th and 6th August 1959 in Charlottenlund Skov. Two fledged young were still being fed by their parents. In bright sunlight the under-parts of each bird appeared buffish-white very palely flushed with yellow fading into greyish-white on the lower belly; the upper-parts were earth-brown and the superciliary greyish-white. In less strong light it was impossible to see any yellow wash at all and the birds looked drab brown above and pale buff beneath. In all lights the local Willow Warblers (*Phylloscopus trochilus*) appeared far yellower below and greener above.

On two other occasions in late summer in Denmark I have noted Icterine Warblers in which the vivid yellow flush illustrated in the *Field Guide* and *The Handbook* appeared in reality as buffish-white faintly tinged with a pale yellow wash that was often extremely difficult to see. Unfortunately, however, I did not keep any detailed notes of these individuals. T. C. SMOUT

Rufous Warbler in Devon.—On 20th October 1959 we were approaching Black Cove, near Prawle Point, Devon, when we saw a light russet-sandy bird which in flight seemed nearly as large as a Song Thrush (*Turdus philomelos*), but which on closer view appeared to be about the size of a Nightingale (*Luscinia megarhynchos*). It was not at all skulking, perching on a dry stone wall, on the tops of bushes and on the open ground of a potato field which had been cleared. Indeed, it seemed to prefer this open ground and made no attempt to

seek the abundant cover of bramble, gorse and bracken which surrounded the area. It hopped or moved in little runs and pauses like a thrush, and several times it appeared to find food on the ground. Its general behaviour was not unlike that of a chat and we had no difficulty in identifying it as a Rufous Warbler (*Agrobates galactotes*). The most noticeable feature about it was the way it constantly moved its long reddish tail up and down, or carried it even more cocked up over its back than a Wren (*Troglodytes troglodytes*) does, to an angle of about 130°. The tail was also frequently fanned to show conspicuous white tips. We noted the following general description:

Under-parts pale buffish-white. Back pale rufous-sandy, wings darker and more rufous. Long tail bright reddish-brown, tipped with white at the sides and having black spots near the ends; centre feathers longer than outer ones (also one feather near the right side only partly grown). No noticeable superciliary. Eyes dark brown; bill light brown and rather long; legs bright pink and long.

We watched the bird for over a quarter of an hour from 1.00 p.m., and again for a similar period between about 2.20 and 2.35 p.m. when it was in a sheltered dip near the cliff-top immediately east of Gammon Head. On both occasions it was seen in excellent light at ranges down to 25 yards or so. We are not able to say to which subspecies the bird belonged, but the generally russet appearance seemed to us to suggest the typical race rather than one of the eastern forms like *A. g. syriacus* ("Brown-backed Warbler").

In conclusion, it is perhaps worth drawing attention to the fact that two of the five occurrences of *A. g. galactotes* listed in *The Handbook* were from the same area of Devon: one at near-by Start Point on 25th September 1859 and the other a few miles away at Slapton on 12th October 1876.

R. C. STONE and E. C. STILL

Yellow Wagtails wintering in Surrey.—In 1957 the writer reported that a Yellow Wagtail (*Motacilla flava flavissima*) had been seen regularly at Beddington sewage-farm, Hackbridge, Surrey, from November 1956 to March 1957 (*Brit. Birds*, 50: 353). This appeared to be the first record of one wintering successfully in the British Isles.

During the winter of 1959-1960 this species was again recorded at Beddington. On 29th November 1959 J. Cooke and R. C. Righelato found a Yellow Wagtail feeding on a flooding water-meadow. The upper-parts were described as brown and the under-parts white with a complete absence of yellow (the bird was first identified by call-note). During December there were numerous records of a Yellow Wagtail, the only two giving plumage details commenting on the absence of

yellow. Then in January and early February 1960 there were conflicting descriptions from about twenty observers. The majority, including the writer, had seen a bird which was undoubtedly an adult cock coming into spring plumage and already showing bright yellow under-parts. A few records, however, still referred to the bird as brown and white. The presence of two individuals was finally confirmed on 14th February when they were found feeding within a few yards of each other. The last record was of one singly on 5th March.

Throughout the winter the birds consorted with large parties of Meadow Pipits (*Anthus pratensis*) feeding on the flooding water-meadows. During periods of snowfall they resorted to searching along the concrete walls of the sewage dykes as the previous one did in 1956-57.

B. S. MILNE

Black-headed Wagtail in Dorset.—On 9th October 1958, at Portland Bill, Dorset, I observed a *flava* wagtail which had all the characteristics of, and was quite inseparable from, the Black-headed form (*Motacilla flava feldegg*). It was first seen at 13.00 hours G.M.T. with a flock of ca. 100 Pied or White Wagtails (*M. alba*) that had arrived some time after 10.00 G.M.T. At long range it was an obvious *flava* wagtail with a black head and very bright under-parts. It was subsequently watched at distances down to 20 feet in bright sunlight and the following details were noted:

Side-on view showed whole of head as black with no difference in colour between forehead, crown, ear-coverts or nape. Black of head extended below eye and dipped down slightly on to nape. Very small white crescentic markings around part of eye. Chin and throat bright yellow with no trace of any white. Rest of under-parts brilliant yellow except for lemon-yellow under tail-coverts. Small brownish markings at sides of breast opposite wing-coverts could only be seen in certain positions. Upper-parts grey-green, wings dark brown edged buff. In head-on view ear-coverts seen to be a slightly more intense black than crown. Slight gloss could be seen on head and upper-parts, and to a lesser extent on under-parts, when the bird was observed closely at a slight head-on view.

A male Yellow Wagtail (*M. f. flavissima*) was seen near-by soon afterwards. Under the same light conditions it appeared quite dull in comparison: the under-parts were a much less brilliant yellow and the upper-parts lacked the contrast between the back and wings. After I had been watching the Black-headed bird for about four minutes I noticed that small parties of *alba* wagtails were breaking off from the main flock and flying north, following the coastline. By the time I returned shortly afterwards with other members of Portland Bird Observatory only a few of these remained and despite an intensive search the bird could not be found again.

Skins were later examined in the British Museum. In several of these the whole head appeared black when viewed from the side, but when looked at head-on a slight contrast could be discerned between the crown and ear-coverts. A. B. SHELDON

It is relevant to comment briefly on other unusual *flava* wagtails seen at Portland Bill in October 1958. The last nine birds of the tail end of the usual autumn emigration were recorded on 28th September, with one on 3rd October. On 7th October, however, two more arrived at the Bill; one of these was only heard, but the other was seen with a party of 5 *alba* wagtails at 07.20 G.M.T. The latter, apparently a male, had crown dark bluish-grey, ear-coverts very dark appearing blackish, no trace of a supercilium, chin and throat impressively white, under-parts lemon-yellow. We at first thought it had the characters of the Grey-headed form (*M. f. thunbergi*), but later the extent of white on the throat indicated that it was closer to the Ashy-headed (*M. f. cinereocapilla*). Alternatively it seemed very near to the variant females of *feldegg* obtained by Ticehurst and Whistler in Albania in 1931 (*Ibis*, ser. 13, ii, p. 53 and pl. I). On geographical grounds the latter identification seems more likely because of the occurrence of the Black-headed bird on 9th October.

On 9th October three other wagtails were seen feeding with a Tawny Pipit (*Anthus campestris*). Two were *flavissima* (one a male and the other in first-winter plumage) and the third was judged to have the characters of the Blue-headed form (*M. f. flava*). These birds were under observation at the time A. B. Sheldon was watching the apparent *feldegg* recorded above. Two more birds appeared on 24th October, one of which was similar to the presumed *flava* seen on the 9th.

Descriptions have been submitted to *British Birds*, but the positive identification of these subspecies must remain uncertain. It is worth calling attention to the review by R. E. Moreau (*Ibis*, 100: 640) of a paper by L. Sammalisto (*Ann. Acad. Sci. Fenn.*, ser. A, 41: 1-46) dealing with *M. flava* in Fennoscandia, in which it is stated that "the hybridization of *flava* and *thunbergi* has produced variants practically inseparable from nine of the thirteen commonly recognised races of the greyheads." In much of Fennoscandia *flava* and *thunbergi* seem to pair at random and in South Finland there is a strong intermediate population. K. D. SMITH and J. S. ASH

Yellowhammers feeding on grasshoppers.—When we took possession of our house at Haslemere, Surrey, in June 1951, the surrounding ground was quite uncultivated and consisted of rough tussocky grass up to eighteen inches or more long, as well as a great deal of hawthorn scrub. The grass abounded with grasshoppers and a couple of pairs

of very active Yellowhammers (*Emberiza citrinella*) were frequently noticed. My wife and I were interested to see that these birds were constantly rising up out of the depths of the grass and then diving back again. Watching with binoculars showed that they were catching small green grasshoppers. They would fly in empty-beaked from the bushes, dive into the grass and come up with a grasshopper, then dive in a second, third and even fourth time until the same number of these insects could be seen held in the beak, neatly arranged like fish in the bill of a Puffin (*Fratercula arctica*). To the best of my memory four was the highest number of grasshoppers we saw making one beakful.

R. C. OLDHAM

Yellow-breasted Bunting in Co. Donegal.—On 18th September 1959 I identified a female Yellow-breasted Bunting (*Emberiza aureola*) at the eastern end of Tory Island, Co. Donegal. It was perching on walls and was fairly tame, seeming tired. I had it in view for half an hour from 3.30 p.m. The day was warm and cloudy, and the light rather poor, but with binoculars at ranges down to 25 yards I was able to note the following details:

Smaller than Yellowhammer (*E. citrinella*). Tail erect when perching. Call a bunting "tsip", but thin and more nasal than a Yellowhammer's. Pale lemon-yellow throat, breast and belly, becoming buff under tail, unmarked except for a few beige streaks on flanks. Very strong head-stripes most obvious: buff-yellow superciliary contrasting with dark brown stripe just below eye (and with buff cheek); dark brown crown with narrow buff stripe down centre, less obvious than that of female Lapland Bunting (*Calcarius lapponicus*). Pale wing-bar visible in flight and a slight second one when perched. Pale (but not white) outer tail-feathers. Rich brown upper-parts, with rather mottled appearance on mantle and scapulars because of pale beige tips to feathers. Rump dark brown, rather dull. Bill and legs dark brown.

The bird eventually flew off towards East Town and could not be found again in spite of an intensive search next day. This is the first record of this species in Ireland.

HENRIETTA COOKE

Reviews

The Birds of the British Isles. By David A. Bannerman. Illustrated by George E. Lodge. Vol. VIII. Oliver & Boyd, Edinburgh, 1959. 400 pages; 26 colour plates. £3 3s.

The eighth volume is both readable and informative and, like the others, very refreshing. It deals with the British "pelicans", Gannet, Frigate-bird, tubenoses, grebes, divers, pigeons, doves and Pallas's

Sandgrouse. Although the series is publicised as the ultimate authority to date on our islands' avifauna, it seems in the case of this volume that, however hard the author has tried to collect all known observations, some facts have been left behind in the great mass of material available. A few obvious weaknesses must be mentioned.

Both Cormorant and Shag get full and for once affectionate treatment, but the problem of the occurrence in Britain of the Southern Cormorant (*Ph. c. sinensis*) is left rather in the air without reference to recent work on plumage variation in this species. There is an excellent essay on the Gannet, including a useful summary of the growth of breeding colonies and a section on human predation. The tubenoses also get their due and, in general, the accounts serve to centralise some very interesting material on this elusive and poorly documented group. However, Dr. Bannerman chooses as his definitive text on Leach's Petrel a paper written twenty years ago, apparently ignoring the efforts of many other island-going ornithologists who have been exploring anew the isles of north-west Scotland in the last five years and whose observations have been published in *The Scottish Naturalist* and elsewhere. The danger of drawing material exclusively from only one or two sources is also shown by the statement that the Balearic Shearwater is absent from Scilly waters, where this form does in fact occur quite frequently. There is a full discussion of the facts (and fantasy) surrounding the only British Collared Petrel. Dr. Bannerman strongly advises its removal from the British list, suggesting the Cape Pigeon (*Daption capense*) as a bird with better claims.

The chapter on the Great Crested Grebe is enhanced by a lucid essay on breeding behaviour, while that on the Slavonian Grebe has in it many notes from a correspondent who lives beside the main Scottish colony. Translations of material from G. P. Dementiev in *The Birds of the Soviet Union* are often included in the sections on this family's members. On the other hand, no use is made of this source over the systematic position of the Great Northern and White-billed Divers. Dr. Bannerman still gives them both specific rank and is thus at odds with the many who now regard them as races. Nevertheless, nowhere else can one read so much about these two magnificent birds.

There is a full summary of observations, many of them collected personally by Dr. Bannerman, concerning the autumn movements of the Woodpigeon. It is clear that he favours the true immigrant theory and he puts up a fair case for it. The section on the Rock Dove includes a helpful statement on its present distribution in a truly wild state. Similarly, the spread of the Turtle Dove into Scotland and that of the Collared Dove across Europe are fully chronicled, while the story of the latter's arrival in Britain is covered to 1958.

The book ends with that paradox of birds, Pallas's Sandgrouse. This final chapter includes one of those wonderfully descriptive quotations that Dr. Bannerman so often allows us in all contexts, and one leaves this volume with a vision of Sohrab and Rustum battling away under an evening flight of sandgrouse. It is just this sort of material that distinguishes Dr. Bannerman's books from all others. His publishers give him space to roam; thus they are never mere text-books, but rather treasure-chests of his own and many others' observations.

The illustrations in earlier volumes by the late G. E. Lodge have already come in for some criticism. To the reviewer's mind they generally complement the text extremely well in spirit and are successful in avoiding the aesthetically dull patterns of mere identification aids. However, it would not be wise to rely on them as a replacement for the plates in existing handbooks.

D. I. M. WALLACE

A History of the Birds of Hertfordshire. By Bryan L. Sage. Barrie and Rockliff, London, 1959. 245 pages; 5 plates and diagrams. 27s. 6d.

There is evidence of much work in this book; it is obvious that Mr. Sage has been diligent in collecting and summarising all published observations on Hertfordshire birds. He has also energetically spurred the present-day bird-watchers in the county into surrendering those local records which too often get buried in field note-books. Such a compilation might have weakened the resolve of a professional ornithologist, far more that of an amateur working in his spare time, but Mr. Sage is not a man to be daunted. His book is now the fullest available document on Hertfordshire birds.

As the latest addition to a long line of county bird books, however, it must also be looked at in the light of those it will join on the natural history shelves. From this viewpoint the author's preoccupation with the pigeon-hole classification of details has made the book lack balance. Two hundred pages are taken up with the systematic list, but only 22 lines are devoted to migration. Those who wait impatiently for proper coverage of internal migration in Britain will be disappointed at this summary dismissal of such an important subject. The description of the county's geographical characters is adequate, but it is surely inexcusable not to include a map in a book of this sort: the omission of one lengthy quotation and of an illustration which has recently been published elsewhere would have made room for the inclusion of such an important aid. The section on changes in the avifauna mentions only ten species and one species-group by name and it is too short to allow any real trend to become apparent.

Mr. Sage is more at home in the systematic list. Combined with a useful appendix, this sensibly covers all the birds, wild and escaped, ever recorded at large in Hertfordshire. All ornithologists who work in this or neighbouring counties will be grateful for the wealth of material contained in this section. Some common species like Black-cap, Garden Warbler and Whitethroat get scant attention, and certain generalisations go too far: for example, will all bird-watchers in Hertfordshire agree that the Linnet is so "very common and generally distributed" in the county? By and large, however, here is a faithful county list that is marred only by the many tedious postscripts resulting from the author's personal devotion to abnormal plumage variations—information which is surely out of place in a county bird book.

To keep the work as up-to-date as possible, Mr. Sage has included a stop-press appendix of selected 1958 observations. Most important of these is undoubtedly the breeding of a pair of Collared Doves. The author cannot have expected such an event when he started his book, but one hopes that similar dramatic happenings lie ahead. Meanwhile, future reviewers of the Hertfordshire avifauna now have a firm base to work on. This book is a worth-while addition to the libraries of everybody interested in the bird-life of the Home Counties.

D. I. M. WALLACE

The Buzzard. By Frank Wenzel. Translated from the Danish by Reginald Spink. George Allen and Unwin, London, 1959. 86 pages, including 30 monochrome and 10 colour plates. 35s.

This beautifully produced book is the work of a young Danish bird-photographer. Devoted entirely to its title, it cannot be regarded as a critical biography of the Buzzard, for there is nowhere any attempt by the author to compare or to correlate his findings with those of others. It is a straightforward account of his own extensive experience of the Buzzard in Denmark. As it is clear that this experience is based on no less than 156 nests, it is to be regretted that the interpretation is so narrow. At the same time, although the book is a "popular" one, with much about the atmosphere of woods and forests at dusk and dawn, it is popular in the best sense of the word, and a sound outline of the Buzzard's life is revealed. Here and there are facts and figures of interest. Of his 156 nests, 81 were in beech, 26 in oak, 49 in conifers. The additions to the bird's food of pig's heads and plaice (!) are novel and surprising.

It is to be expected that such a book should be well illustrated. This is the case, and it is yet another example of the difference between the Continental and the British schools of bird-photographers. The Continentals have a high sense of illustrative value and merit, as

opposed to the rigid insistence on technical perfection which is the great virtue, and yet the great limitation, of the British school. Abroad they have certainly learnt to catch atmosphere with their cameras (the moon rising over the forest, and birds alighting against the rays of the setting sun) and also drama (close-ups of the Buzzard's eye and of mice vanishing down a young bird's maw). There is no doubt that such illustrations have both variety and appeal. It is, however, a pity that the Continentals are not more critical of their technical standards when they do use the traditional photograph of the bird at the nest. Again, when so many of their excellent illustrations show the bird perched on trees and stumps, in situations from which the photographer who works only on truly wild subjects would find it very difficult to get results, it would be of assistance in evaluating the merits of the pictures if the author would state clearly whether or not they were taken of free birds or of young ones groomed for the purpose. There is nothing wrong in the latter, but it is part of a bird-photographer's code always to disclose the fact if it is so.

G.K.Y.

The Birds of the Palearctic Fauna. A Systematic Reference (Order Passeriformes). By Charles Vaurie. Witherby, London, 1959. xii+762 pages. £5 5s.

Fifty years ago Ernst Hartert brought all the Palearctic species and subspecies together in a critical review, *Die Vögel der Palaäarktischen Fauna*, a work which has since stood as the basis for taxonomic research in the Eurasian region. Such research, developing naturally as the result of increased exploration of the avifauna of many lands, has shown the need for a new appraisal of the birds of this vast region, and Vaurie's work goes a long way towards meeting that need. (The present volume covers only the Passeriformes, but it is stated that a companion volume on the remaining orders is being prepared.) A great part of its value lies in the fact that it embodies his own intensive studies of recent collections made in the previously little known Iranian region embracing Iran, Afghanistan and Baluchistan, the detailed results of which, together with a number of other studies of Palearctic Passerines, appeared as thirty-three separate numbers of *American Museum Novitates* between 1953 and 1958.

The present work, then, is nothing if not authentic, and as a taxonomic guide will supplant Hartert's great work for many years to come. It is a pity that its scope was not extended to include (as in Hartert) a brief description of each species, giving the main diagnostic characters, for the earlier work is now virtually unobtainable and the standard of field-work during the past half-century has improved so

enormously that there is today a potential market among amateur ornithologists for a comprehensive and up-to-date study of this kind. It is appreciated that such comprehensive planning (as the author himself was aware) would have greatly increased the size—and cost!—of the present work, and perhaps it would be fairer to direct one's regrets towards the economic background of western civilisation rather than at any lack of foresight on the part of the author.

Notwithstanding this omission, which field-workers will deplore much more widely than taxonomists, this book has everything to commend it to the ornithologist whose outlook is not strictly parochial. For those engaged in bird observatory work, or in trapping and netting wherever migrant "rarities" are likely to turn up, or in travelling widely abroad, the work is an indispensable companion. A brief habitat note on all species is included, but by far the most useful single contribution is the distribution outline given for species and subspecies. In this respect the book is vastly superior to anything that has gone before, and the reader's understanding of this important aspect of Palearctic ornithology is greatly facilitated by the inclusion of a gazetteer (with sketch-maps of Turkestan and western China), and by the regional arrangement of the bibliography, these two features occupying 26 pages. The author's bald statement, "I have described the ranges as accurately as possible," can convey little of the colossal amount of painstaking research which must have gone into this section alone.

It is always difficult for the author of a systematic work on this gargantuan scale to strike the right degree of impartiality in the presentation of geographical races. Vaurie appears to have been scrupulously fair. Subspecies are graded into three categories: firstly, the well-differentiated ones; secondly, the moderately well-differentiated ones, which are treated separately but indicated by a special symbol; and thirdly, the poor ones, which are branded with an asterisk and relegated to the appropriate synonymy. It is of course an arbitrary system and the basis of it, as always in a work of this kind, is personal judgement; and, although not everyone will agree with the author's opinions, neither the "lumpers" nor the "splitters" will find much to grumble about, since the treatment provides an eminently satisfactory basis for future work. A valuable feature of this section is the outline given under polymorphic species of the geographical trends of variation, whether clinal or otherwise, but the brief diagnostic characters given for each subspecies are of limited value in the absence of species descriptions themselves.

Those who are accustomed to using *The Handbook of British Birds* will find a number of changes from that work. The arrangement, of course, accords with the "Wetmore order", apart from some minor departures. The notes which follow now summarise the features of

Vaurie's treatment which will be of most interest to British ornithologists, and also include a few points of criticism.

Alaudidae. The Short-toed Larks are treated as conspecific with *Calandrella cinerea* (Gmelin): *brachydactyla* is considered a good race, with *rubiginosa* and *bermonensis* only slightly differentiated. It is interesting to note that, whereas eastern Short-toed Larks reaching Fair Isle are usually identified with *longipennis*, *artemisiana* is perhaps as likely to reach western Europe as a vagrant. The eastern Skylarks recorded in *The Handbook* (I: 183-184) as *Alauda a. intermedia* can hardly belong to that race as now understood, and the birds seem more likely to have been specimens of either *dulcirox* or *kiborti*.

Motacillidae. Richard's Pipit becomes *Antbus novaeseelandiae richardi*. Among the Rock Pipits, the range of *A. s. kleinschmidti* should in the present writer's view be extended to include Shetland and Fair Isle as well as the Faeroes; and surely *A. s. meinertzhageni* of the Outer Hebrides is a well-differentiated form, exactly as described in *The Handbook* (I: 210). The Atlantic race of the Meadow Pipit (*Antbus p. theresae*), far from being an indistinct form from W. Ireland as Vaurie has it, is a well-differentiated one breeding in Iceland (*Bird Migration*, 1: 88-91) and is a migrant at the type-locality. All the Yellow Wagtails are "lumped" together as *Motacilla flava*.

Laniidae. The "Red-backed" and "Red-tailed" groups of shrikes are maintained as separate species, *Lanius collurio* (including *isabellinus*) and *L. cristatus*; and Clancey's *L. c. juxtus* is accepted as the breeding-bird of England and Wales, having a slightly darker mantle than nominate *collurio*.

Corvidae. The English Jay (*Garrulus glandarius rufitergum*) is thought to be only "moderately well-differentiated"; and *caledoniensis*, under which name Hazelwood and Gorton described the Scottish bird, is placed as a synonym of the richly-coloured *bibernicus*, rather than of the nominate form, which it most nearly resembles.

Troglodytidae. The Wren of England, Wales, Scotland and Ireland is *Troglodytes t. indigenus* Clancey, "moderately well-differentiated" from the typical race of Continental Europe. In the same category are *fridiariensis* (Fair Isle) and *hebridensis* (Outer Hebrides), with *zetlandicus* (Shetland) and *birtensis* (St. Kilda) above them in the hierarchy. (It is a pity that "Saint Kilda Island" occurs in the book on several occasions: there was no saint of the name and the correct form is St. Kilda.) The use of *indigenus* for the English birds is justified: Swedish birds have more extensive vermiculation on the ventral region and flanks, while the upper-parts are less rufous and more extensively marked with black. English birds are the whitest of all beneath, Irish birds being suffused with brownish-buff and nearer *hebridensis* but lacking the strong vermiculation of that race.

Muscicapidae (Sylviinae). The Cape Verde Cane Warbler (*Acrocephalus brevipennis*) is omitted from the work. The Paddyfield Warbler (*A. agricola*), here divided into three races, is surely monotypic: *tangorum* seems more correctly placed as a race of *A. bistrigiceps*, and "*brevipennis*" is merely a plumage-phase due to moult in the present writer's view. *A. agricola* and *concineus*, *A. arundinaceus* and *stentoreus*, and *Sylvia curruca*, *minula* and *althea* are all regarded by Vaurie as separate species. The Iberian forms of the Chiffchaff, *brebmi* and *ibericus*, are synonymised with *Phylloscopus collybita*; and in Vaurie's opinion all the western records of *Pb. c. tristis* "probably belong to *fulvescens*", which he finds an acceptable race (see *Brit. Birds*, 48: 561-562). Vaurie follows the view of Portenko that the form of Arctic Warbler breeding from Siberia west to Lapland is *Pb. borealis talorka*, the nominate form being confined to N.E. Siberia. *Pb. nitidis* is given specific rank: as a vagrant to Britain it might be confused with *Pb. trochiloides* or *Pb. borealis*. A separate British Golderest is not recognised.

Muscicapidae (Muscicapinae). The genus *Ficedula* is used for the Pied, Collared and Red-breasted Flycatchers, and *Muscicapa* for the Spotted and Brown Flycatchers.

Muscicapidae (Turdinae). The Hebridean Stonechat *theresae* is synonymised with *Saxicola t. hibernans*, and the Faeroe-Iceland Wheatear *schioleri* with the Greenland race (*Oenanthe oe. leucorrhoa*). Following the Wheatears we have *Cercotrichas*, containing the Rufous Bush-Robin (*C. galactotes*), much better placed here than among the warblers: this is the bird which is usually called the "Rufous Warbler" in British books. The genus *Catbarus* is used for the Nearectic Gray-checked (*C. minimus*) and Olive-backed (*C. ustulatus*) Thrushes. The Red-throated and Black-throated Thrushes are united under *T. ruficollis*, and Naumann's and Dusky Thrushes under *T. naumanni*; while the names used for the Redwing and Song Thrush are respectively *T. iliacus* (*T. musicus* auctorum) and *T. philomelos* (*T. ericetorum* auctorum). The White's (or Golden Mountain) Thrush is transferred to *Zoothera*.

Paridae. The Bearded Tit (*Panurus biarmicus*) is placed in the subfamily Timaliinae (babblers, laughing thrushes, etc.) of the Muscicapidae, and the Long-tailed Tit (*Aegithalos caudatus*) has status as a separate family (Aegithalidae). The Willow Tit becomes *Parus montanus*, the name *atricapillus* being reserved for the American Black-capped Chickadee. The nuthatches (Sittinae) and Wallcreeper (Tichodromadinae) are regarded as subfamilies of the Paridae, the latter being removed from the Certhiidae.

Fringillidae. It is alarming to find that the Central European race of Chaffinch (*Fringilla c. hortensis*) is synonymised with the typical race, and that the English *gengleri* "differs only slightly". The genus *Chloris* is dropped, the Greenfinch becoming *Carduelis chloris*, and the genus *Acanthis* is resuscitated for the Twite, Linnet and redpolls. The Hebridean Twite (*A. f. bensonorum*) is made a synonym of *A. f. pipilans*, though it is much darker than the typical race, from which English breeding birds hardly differ. Linnets from Scotland are considered separable as *A. c. autochthona* Clancey; while among the redpolls (two species, *A. flammea* and *A. bornemanni*), the Icelandic and Greenland birds are separated and the British Lesser Redpoll (*A. f. disruptis* Clancey) is not considered separable from the Alpine bird (*C. f. cabaret*), though it is at least a slightly differentiated form. The Scottish Crossbill appears as a race *scotica* of *Loxia curvirostra* and not of the Parrot Crossbill (*L. pytyopsittacus*) where it would appear to be much better placed.

Emberizidae. The buntings have family status and the Yellowhammer of Scotland, Ireland, Wales, the Isle of Man and northern and western districts of England is separated as *Emberiza citrinella caliginosa* Clancey, "probably grading into nominate *citrinella* farther south and east". The Black-headed (*E. melanocephala*) and Red-headed (*E. bruniceps*) Buntings are regarded as distinct species—a last generous concession to the "lister" in a work that is a truly remarkable achievement in erudition and industry.

One last word. The lay-out and typography, and indeed the whole of the technical side of production, are beyond praise and reflect the greatest credit on the publishers. K. W.

Letters

Migrations of the Oystercatcher

Sirs,—Since Mr. D. G. Andrew in his recent paper (*Brit. Birds*, 52: 216-220) on the migrations of the Oystercatcher (*Haematopus ostralegus*) makes some criticism of my earlier paper on the same subject (*Brit.*

Birds, 50: 519-526), perhaps you would be kind enough to allow me a reply, and an apology. The apology concerns my careless error in giving 29th May 1954 as the date of the ringing of an adult Oystercatcher on the Isle of May. Mr. Andrew correctly points out that this date should be 29th September. This is the classic error of dittography.

Mr. Andrew seems to think that the only evidence I had of the behaviour of adult Oystercatchers lay in the six records of full-grown but not necessarily mature birds listed on page 522. He makes no mention of my Table II which gave the recovery data of 17 certainly adult Oystercatchers. It was of course on these, not on the six birds of uncertain age, taken together with the records of immatures in Table I, that I based my tentative conclusions.

Mr. Andrew says that his Table I incorporates "all immature birds recovered between the October of their first year and the February of their third year", but immediately afterwards he qualifies this by saying that "a few September and one or two August records have also been included where the facts very strongly indicate that the bird had reached the end of its migration". I have no idea what this means. In my Table I were included 42 records from the first August and September, of which 14 were for birds that had already travelled 200-1,000 miles. I have no preconceived notion of where any of these birds was likely to reach "the end of its migration". I do not understand how anyone can say that a bird recovered in December or January, much less in August or September, has reached its "furthest south". The recent record (*Brit. Birds*, 52: 462) of an Oystercatcher ringed as a chick on Scolt Head Island, Norfolk, and recovered in its first December on the west coast of Morocco suggests that the end of an Oystercatcher's migration may be much further afield than any of us had suspected. This record also suggests that Mr. Andrew's "Average miles" column, on the scanty information yet available, is meaningless, which was indeed obvious enough already.

I also made it quite clear that in my opinion "by no means all" young Oystercatchers migrated, and that not all breeding Oystercatchers were sedentary.

My conclusions were stated with caution, as Mr. Andrew acknowledges. Let my hypotheses be disproved when more evidence accumulates; but they cannot be disproved, as Mr. Andrew seeks to disprove them, merely by the omission of much of the data on which I based them.

E. J. M. BUXTON

Swans in Kent in February 1956

Sirs,—With reference to Dr. I. C. T. Nisbet's article on the influxes of Bewick's Swans (*Cygnus columbianus bewickii*) in the British Isles (*Brit.*

Birds, 52: 393-416), I should like to make a correction to Table II on page 398. Included in this table is a record of 12 birds which were seen at Botany Bay, Kingsgate, on 20th February 1956. These birds are stated in a footnote to have been "originally reported as Whooper Swans (*Cygnus cygnus*)", and this is precisely what they were.

It was snowing lightly at the time, and the birds flew past at cliff-top level, a height of about 40 feet. I had excellent views of the bill pattern at close range, and I noted the general size of the birds and the length of their necks. Their direction of flight was indicative of a coasting movement and I believe that they had flown round from the mud-flats at Pegwell Bay, where they had been reported the previous day.

D. WORSFOLD

The Carduelinae as a subfamily of the Ploceidae

Sirs,—The recent review by A.L.T. of *Fundamentals of Ornithology* by Josselyn Van Tyne and Andrew Berger (*Brit. Birds*, 52: 391) contains these words: "The authors also appear to have followed certain views of their own on taxonomy; thus, the inclusion of the Carduelinae (in addition to the Passerinae) in the Ploceidae is unusual and unexplained. . . ." In this connection I wish to draw attention to the paper by H. B. Tordoff, published in 1954, on "A systematic study of the avian family Fringillidae based on the structure of the skull" (*Misc. Publ. Mus. Zool. Univ. Mich.*, No. 81). In this the author shows that the Carduelinae can be separated from the remaining Fringillidae on palatal structure, proportions of the humerus and leg bones, certain dietary requirements, distribution, migration habits, singing habits, social behaviour and nest sanitation. Chiefly on the basis of skeletal characteristics Tordoff concludes that the carduelines are ploceids.

More recently I have confirmed this relationship by an immunological analysis of red-cell antigens of Carduelinae and their allies (see D. Mainardi, 1958, "La filogenesi nei Fringillidi basata sui rapporti immunologici", *Istituto Lombardo (Rend. Sc.)*, B 92: 336-356). This analysis is well qualified for phylogenetic studies; in fact, it considers a very large number of genes, every antigen being generally determined by a different gene. As antigens are gene-determined, it can be inferred that the closer related two species are, the greater is the number of their common antigens, and the smaller the number of specific ones. So common antigens are a measure of common ancestry, while specific ones are a measure of differentiation.

I think that Tordoff's results and also mine can at last partially explain the unusual inclusion of the Carduelinae in the Ploceidae.

DANILO MAINARDI

Department of Zoology, University of Parma, Italy

[We have shown this letter to A.L.T. who has commented as follows: "Your reviewer is not in a position to assess the findings of Tordoff and Mainardi. His comment was merely to the effect that a departure from currently accepted practice was made without citation of reasons or authorities. One realises, of course, that in the present state of knowledge such practice is often arbitrary and seldom final."—Eds.]

Recent reports and news

By I. J. Ferguson-Lees and Kenneth Williamson

The items here are largely unchecked reports, and must not be regarded as authenticated records. They are selected, on the present writers' judgement alone, from sources generally found to be reliable. Observers' names are usually omitted for reasons of space and in case a report is subsequently rejected, and none of the items will be mentioned in our annual Index. Readers are asked to submit anything of interest as quickly as possible.

This summary very briefly covers some of the more interesting aspects of the first 3½ months of 1960. Among rarer birds, one of the most noteworthy was a Great Spotted Cuckoo (*Clamator glandarius*) which stayed from 3rd April to at least 15th on Pen-lon marsh, Newborough (Anglesey); it was to be seen hopping about the grass, feeding greedily on worms and probably caterpillars of the Drinker Moth. Two other southern species were reported later in April: two Bec-eaters (*Merops apiaster*) at Stanford-le-Hope (Essex) on the 20th, one at Cley (Norfolk) on the 21st and two later the same day between near-by Blakeney and Morston; and also on the 21st a Night Heron (*Nycticorax nycticorax*) near Budleigh Salterton (Devon). A clear influx of Ferruginous Ducks (*Aythya nyroca*) at the beginning of the year included a male at Hornsea Mere (Yorkshire) on 5th January; a male at Barn Elms Reservoir (Surrey) for some time from 10th January; a male at Theale New Gravel Pit, Reading (Berkshire), and a female at Harewood Park Lake (Yorkshire), both on 7th February; a male shot on the South Slob (Co. Wexford) on 11th February; and an immature male at Gailey Reservoir (Staffordshire) from 22nd February to at least the 29th. A male Green-winged Teal (*Anas crecca carolinensis*) was identified at Eccup Reservoir, near Leeds (Yorkshire), on 19th February. There were several reports of Red-crested Pochards (*Netta rufina*) in Berkshire, Gloucestershire and especially Sussex. Sussex also had more than its share of Mediterranean Black-headed Gulls (*Larus melanocephalus*), at least one a month during the period, the most recent on 16th April; these gulls were also noted in other regular areas such as Hartlepool (Co. Durham), but a more interesting observation concerned an immature at St. Ives (Cornwall) from 7th March to at least 28th. Among reports of Kentish Plovers (*Charadrius alexandrinus*), we should mention one at Portland (Dorset) on 2nd April and one at Perry Oaks (Middlesex) the next day. A Bluethroat (*Cyanosylvia svecica*) at Dungeness (Kent) on the very unusual date of 23rd January is also worth noting. Six cranes, considered to be *Megalanus grus*, were seen over various places in Middlesex and Surrey on 4th and 5th April, while a Demoiselle Crane (*Anthropoides virgo*) was observed at Carshalton and Beddington (Surrey) on 31st March and 10th April respectively: this was surely an escape.

There was evidently an influx of Avocets (*Recurvirostra avosetta*) about 2nd-3rd April and at that time, apart from ones in Norfolk, Suffolk, Kent, Sussex and Dorset, a party of eight was seen in Derbyshire and Warwickshire and five on Burton Marshes on the Flintshire side of the Dee; and on the 4th Leicestershire also had two. The commoner summer-visitors began to arrive unusually early

and a clear fall of Chiffchaffs (*Phylloscopus collybita*) took place in the last four days of February, there being a sudden crop of records in south coast counties and in Surrey, while on the 29th one was in song as far north as Northamptonshire. A further influx followed in the first week of March when there was quite a spate in counties like Surrey, Middlesex and Gloucester and the first ones appeared up the east and west coasts in Norfolk, Cardigan and Flint. The second week of March saw a still bigger fall and Chiffchaffs as far north as Derby and various Midland counties. Chiffchaffs took pride of place, but they were not the only early arrivals. Similarly at the end of February, for example, Garganey (*Anas querquedula*) were noted in Kent, a Wheatear (*Oenanthe oenanthe*) in Devon and, still more remarkable, a Sand Martin (*Riparia riparia*) in Sussex on the 27th and single Swallows (*Hirundo rustica*) at Haverfordwest (Pembrokeshire) and Starcross (Devon) on 29th February and 1st March, followed by another at Ashburnham Lake (Sussex) on the 6th. The Pembrokeshire Swallow was first found flying round a bedroom and after release remained in the area for several days. The first Hoopoes (*Upupa epops*) were seen in Cornwall on 28th February and 6th March and in Co. Cork on the latter date.

In spite of this early start, however, most summer-visitors remained scarce well into April. The numbers of Hirundines, for example, were still surprisingly small in mid-April. It is hoped to develop the picture of migrant arrivals in another issue, but at the moment information for March and April is still coming in and this paragraph must be confined to mention of a few other early dates. A Sandwich Tern (*Sterna sandwicensis*) appeared at Chew Valley Reservoir (Somerset) on 12th March and the species was noted as far north as Ayrshire by 6th April. Common or Arctic Terns (*S. hirundo* or *macrura*) were seen at Portland (Dorset) on 26th March, at Christchurch Harbour (Hampshire) on 31st March, on the Exe Estuary (Devon) on 2nd April (2) and 3rd April (4), at Grune Point (Cumberland) on 2nd April, and at Pitsford Reservoir (Northamptonshire) on 6th April. Also at Pitsford on the 6th was a Black Tern (*Chlidonias niger*) and another the same day at Hollowell Reservoir (Northamptonshire), followed on the 10th by one at Staines Reservoir (Middlesex). The first Sedge Warblers (*Acrocephalus schoenobaenus*) included one at Ruxley (Kent) on 26th March and one at Penzance (Cornwall) on the 27th. Two Tree Pipits (*Anthus trivialis*) appeared at Cape Clear (Co. Cork) on 21st March, with two again on the 26th and one on the 27th. There was also a House Martin (*Delichon urbica*) there on the very early date of 23rd March. A number of Redstarts (*Phoenicurus phoenicurus*) arrived in the south in the last few days of March, as now happens every year, the first ones at Cape Clear on 26th and 28th March. Several late March Blackcaps (*Sylvia atricapilla*) may have been first arrivals or wintering birds. Quite exceptional numbers of Blackcaps were recorded during the past winter, not only in most English counties as far north as Lancashire, Westmorland, Cumberland, Co. Durham and Northumberland, but also in Kirkcudbright, Peebles, Renfrew, Stirling, Fife, Perth, Aberdeen, Moray and Ross.

Field investigations of the B.T.O.

Status of the Red-backed Shrike.—It is aimed to establish the present status of the Red-backed Shrike (*Lanius cristatus collurio*) and, if possible, to throw some light on the reasons for the considerable decrease that has taken place during the present century. Both positive and negative reports from suitable habitats are required, as well as any information on changes in numbers. Enquiry forms may be obtained from the organiser, Dr. D. B. Peakall, 88 St. Andrew's Road, Coulsdon, Surrey, but casual records (giving date, place and number of shrikes) will also be welcome, particularly from areas where there is no county report or where not all records are given in the report.

Notice to Contributors

British Birds publishes material dealing with original observations on the birds of Britain and western Europe, or, where appropriate, on birds of this area as observed in other parts of their range. Except for records of rarities, papers and notes are normally accepted only on condition that the material is not being offered to any other journal. Photographs (glossy prints showing good contrast) and sketches are welcomed. Proofs of all contributions accepted are sent to authors before publication. After publication 20 separates of papers are sent free to authors; additional copies, for which a charge is made, can be provided if ordered when the proofs are returned.

Contributors are asked to observe the following points, attention to which saves the waste of much editorial time on trivial alterations:

1. Papers should be typewritten with double spacing, and on one side of the sheet only. Shorter contributions, if not typed, must be clearly written and with similar spacing. Failure to help in this way may result in delays to publication.
2. Notes should be worded as concisely as possible, and drawn up in the form in which they will be printed, with signature in block capitals and the writer's address clearly written on the same sheet. If more than one note is submitted, each should be on a separate sheet, with signature and address repeated. In the case of rarity records, any supporting description which is too detailed for publication should be attached separately.
3. Certain conventions of style and layout are essential to preserve the uniformity of any publication. Authors of papers in particular, especially of those containing systematic lists, reference lists, tables, etc., should consult the ones in this issue as a guide to general presentation. English names of species should have capital initials for each word, except after a hyphen (e.g. Willow Warbler, Black-tailed Godwit), but group terms should not (e.g. warblers, godwits). English names are those used in *The Handbook of British Birds*, with the exception of the changes listed in *British Birds* in January 1953 (46: 2-3). The scientific name of each species should be given (in brackets and underlined) immediately after the first mention of the English name. Subspecific names should not be used except where they are relevant to the discussion. It is sometimes more convenient to list scientific names in an appendix. Dates should take the form "1st January 1955" and no other, except in tables where they may be abbreviated to "1st Jan.", "Jan. 1st", or even "Jan. 1", whichever most suits the layout of the table concerned. It is particularly requested that authors should pay attention to reference lists, which otherwise cause much unnecessary work. These should take the following form:
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Various other conventions concerning references, including their use in the text, should be noted by consulting examples in this issue.
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Some notes on the Rufous Warbler
Bryan L. Sage

Notes

Recent reports and news

Three
Shillings



June
1960

British Birds

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British Birds

VOL. 53 No. 6

JUNE 1960



Lesser Short-toed Larks in Cos. Kerry, Wexford and Mayo: a bird new to Britain and Ireland

A HIGHLY INTERESTING and fully accepted addition to the list of the birds of Britain and Ireland that has not yet received full notice in this journal is the Lesser Short-toed Lark (*Calandrella rufescens*). Since 1956 there have been four records in Ireland, in Cos. Kerry, Wexford (twice) and Mayo, involving a total of over 40 birds. This species is mainly a summer visitor to southern Spain, the Canary Islands and North Africa, and from south-west Asia and southern Russia to Mongolia and Manchuria. It is, of course, illustrated in *A Field Guide to the Birds of Britain and Europe*. The occurrences have been recorded in the *Irish Bird Report* (1956, pp. 15 and 24; 1958, p. 30), but most of the details given below are being published for the first time.

The first record was of a flock of 30 birds seen by Frank King at Derrymore Island, Co. Kerry, on the curious date of 4th January 1956. He was unable to identify them at the time, but he took the following detailed notes:

A compact party of 30 small larks feeding in fairly close-cropped grass in an area consisting of a mixture of grazing and salt marsh. Very small for a lark, almost as small as a Twite (*Carduelis flavirostris*), but in contour identical with Short-toed Lark (*Calandrella cinerea*) seen on Great Saltce, Co. Wexford. They differed from the latter species in being a shade darker on the upper-parts, in having the upper breast evenly ticked with short dark brown streaks on a pale buff ground, and in being without any dark patches on the sides of the neck. The ticking extended down either side of the breast with decreasing intensity, and was only just discernible on the flanks of some birds, though more pronounced on others. There seemed to be some slight variation in the intensity of markings between one bird and the next, but the general features were the same on all. The crown was finely streaked dark brown, the streaking becoming less defined on the nape; brown-streaked "cheek-patches" were rather accentuated by being bordered above by pale superciliaries and below by a pale line which ran along the lower edge of the ear-coverts. The back was finely speckled and marbled dark brown and light brown. Two very

thin buff wing-bars were formed by pale tips to the greater and lesser wing-coverts. The tail was dark brown with white outer feathers. The belly was off-white (appearing white in flight), becoming palest buff on the breast; the chin was buff and unstreaked. The bill was lark-like (i.e. exactly as Short-toed Lark), greyish-horn in colour. The shortish legs were light brown. The voice, heard chiefly in flight, was reminiscent of the call of a Skylark (*Alauda arvensis*), but weaker and more metallic—though not quite as metallic as that of the Short-toed Lark. A second note was not unlike the “rick-kick-kick” of a Turnstone (*Arenaria interpres*), but sharper; this was sometimes delivered as a single call and at other times repeated fairly rapidly (possibly by more than one bird). The larks ran and walked about on the grass and frequently crouched behind tussocks, often stretching up their necks to obtain a better view when they found they were being stalked. When disturbed they flew only short distances, and they were often disturbed as they were repeatedly followed up and seen many times as close as 9 or 10 feet and less. The day was very sunny and mild.

By a happy coincidence Frank King was on Great Saltee, Co. Wexford, with P. D. Nolan, F. O’Gorman and R. G. Pettitt when a party of five small larks identical in appearance and voice with King’s Derrymore birds was found on 30th March 1956. Next day four were still present. They were identified as Lesser Short-toed Larks. Full details and sketches are in the Saltee Bird Observatory record-books.

Then on 21st May 1956 Frank King, this time in company with R. G. Wheeler, encountered two Lesser Short-toed Larks on a short grassy stretch in a marshy area near Belmullet, Co. Mayo. They showed all the characteristics which had been noted in the birds at Derrymore in January and at Great Saltee in March, i.e. small size, streaked crowns, pale buff superciliaries, pale line surrounding brown-streaked ear-coverts, speckled and streaked upper-parts, two thin pale wing-bars, pale buff-washed breast and pale belly, vertical ticking across upper breast and down either side to fade out on the flanks, legs honey-brown, bills stout and grey. They spent much time preening or quietly feeding but one bird flew up once or twice to a height of nine or ten feet and sang a brief snatch of song—a rather jangling mixture of clicking and sweetly musical notes. Otherwise they remained silent. There were many Skylarks in the area for size-comparison.

Finally, two years later, in March 1958, R. G. Pettitt and Major R. F. Rutledge found another small party on Great Saltee, Co. Wexford. Five were seen on 22nd March 1958—three together and two others which occasionally joined them. Excellent views were had from behind a low bank at a range of about 30 feet. The next day, 23rd March, only one could be found in spite of a careful search, but it was seen several times and once at a distance of less than 20 feet. On 24th March, however, two were again seen and on the 25th four. The following is a summary of the main points noted:

On the ground they were more reminiscent of large Redpolls (*Carduelis flammea*) or Linnets (*C. cannabina*), but in flight they proclaimed their true relationship by

their general similarity to small Skylarks with their white outer tail-feathers and pale wing edgings, and by their calls which, however, were lower, weaker and more melodious than those of Skylarks. In size they were much less than the Skylarks which were also present (though the two species did not associate either on the ground or in flight) and when both were in the air the difference was very striking. Apart from size, the most noticeable feature was the finely streaked gorget which in some of the birds ended in an abrupt line across the breast, contrasting with the creamy colour of the rest of the underparts. The chin and throat also showed up lighter against the finely streaked breast, though the birds normally fed quickly with a stabbing action, holding their heads low in a hunched position, so that these areas were invisible. No neck marks such as those in Short-toed Larks could be detected. In general the colour above was rather like that of darker examples of the Meadow Pipit (*Anthus pratensis*), though somewhat warmer, and the upper-parts were thus darker than those of the average Skylark. One bird on the 22nd, however, was much lighter and more hoary above than the others; this bird's crown also had noticeable dark markings. On the 24th, when the best view of all was obtained, it was noted that the two birds seen then had a golden tinge to the upper-parts, a faint and narrow whitish or yellowish wing-bar and pale tips to the secondaries. None of the birds showed any sign of a crest; their bills were noticeably small and neat and relatively fine; and their legs were yellow-brown. On the whole they were very nondescript.

R. G. Pettitt considered these birds to be identical in their main characters with those seen by him and others on the same island in March 1956.

Juvenile and winter plumages of the marsh terns *

By *Kenneth Williamson*

Migration Research Officer, B.T.O.

(Plate 36)

IDENTIFICATION of the three British marsh terns (*Chlidonias* spp.) outside the breeding season has long constituted a problem for the bird-watcher. There is a cautionary note in *The Handbook of British Birds* (vol. v, pp. 7 and 9) to the effect that the Whiskered Tern (*Ch. hybrida*) and White-winged Black Tern (*Ch. leucopterus*) are probably not separable in winter in the field, though the detailed descriptions of the two in the same work (pp. 8 and 11) give the impression that the young birds have the rump grey in the former species and white in the latter. Meinertzhagen (1954, p. 514) uses this character for distinguishing *leucopterus* in his key to Arabian Laridae. Those who are familiar with the group in breeding dress (when, of course, they are readily distinguishable from one another) have expressed the view

*A publication of the *British Birds* Rarity Records Committee.

that differences in build and flight might also be important outside the breeding season.

Several autumn records of the White-winged Black Tern have been claimed in the last two years, as well as a number of summer ones in the previous decade. Two autumn observations were accepted in 1958 (*Brit. Birds*, 53: 166), and in 1959 no less than four (in addition to five more in the spring and summer). Thus this species seems to be occurring with a fair regularity and it is probable that some individuals are overlooked in autumn plumage through lack of knowledge of the diagnostic characters. This study seeks to establish what are the most reliable characters for identification of the three marsh terns in juvenile, first-winter and adult winter plumages. It is based partly on field observations in connection with the records mentioned above, and partly on the examination of over a hundred non-breeding specimens at the British Museum (Natural History).

The characters which give the most promise of proving effective in field discrimination are first considered separately in the light of museum examination; then in the second part of the paper actual field-notes are discussed and the main points summarised in Table I on page 249.

MUSEUM EXAMINATION

Size of bill

There is a marked difference in bill-size between the Black Tern (*Ch. niger*) and the White-winged Black Tern. The latter has a small, stubby bill measuring 22-25 mm. from the feathers (10 specimens, both sexes), decidedly shorter than the head; whilst the Black Tern has a longer though comparatively weak-looking bill measuring 27-28 mm., nearly as long as the head. The figures given in *The Handbook* for the Whiskered Tern are misleading, suggesting that this bird has the longest bill of all (30-34 mm.), with a pronounced gonys similar in form to the bills of sea terns (*Sterna* spp.). This is true only of the males (29-34 mm.), the females having much smaller bills (25-27 mm.), only a little longer and more robust than in the White-winged Black Tern.

Bill-size, therefore, is a character of rather uncertain value, best used to corroborate other field-characters.

Sides of breast

As stated in *The Handbook* (vol. v, p. 9), the Black Tern has greyish-brown smudges on the sides of the white breast, a downwards extension of the plumage of the upper-parts, and these markings are diagnostic of this species in all the non-breeding plumages. Note, however, the warning that these patches vary in size and are "not always at all conspicuous in the field".

Confusion on this score could also arise in the event of a White-winged Black Tern, moulting from breeding into winter plumages, retaining a few old blackish feathers in this region. Such specimens in the British Museum, however, always had a few other black feathers admixed with the white underparts, and showed a good deal of black in the under wing-coverts.

Head

The forehead is white in all three species. All have black or blackish-brown "caps", with the crown generously flecked with white in the juvenile Whiskered and the hind-crown more uniformly blackish—though in the winter adult this too is flecked with a certain amount of white. The white flecking is less pronounced in the juvenile White-winged (though well-marked in the winter adult), and the colour is uniformly blackish-brown in both juvenile and adult Black Terns. There is a dark triangular patch forward of the eye, bigger in the Black Tern than in either of the other two.



FIG. 1. Head-patterns of marsh terns in non-breeding plumages (from skins): top left, White-winged Black Tern (*Chlidonias leucopterus*); top right, Whiskered Tern (*Ch. hybrida*); bottom, Black Tern (*Ch. niger*). In each case the upper head is a juvenile (from a late August or early September specimen) and the lower a winter adult (from an October specimen). Compare the amounts of flecking on the crowns and the extents to which the dark ear-coverts are or are not joined to the crown-caps, the presence or absence of shoulder-marks, the sizes and shapes of the bills, and the sizes of the triangular patches in front of the eyes (see text) (sketches: D. I. M. Wallace)

The head-pattern provides an additional character for distinguishing Black from the other two terns in adult winter plumage. Whereas in the Black Tern the blackish-brown of the crown is united with the similarly-coloured ear-coverts, forming a complete hood, there is a sharp contrast in the White-winged Black Tern between the nearly isolated black ear-coverts and the white-peppered crown. In the Whiskered Tern the black ear-coverts are joined to the black of the hind-crown and the space above is mottled with white, so that the black appears as a C-shaped band. However, apart from a greater tendency in the White-winged for the ear-coverts to appear as an isolated patch, it is doubtful if other than the long-billed male Whiskered Terns could be safely distinguished on the appearance of the head (see Fig. 1).

Nape, mantle and rump

Juvenile Black and White-winged Black Terns have fairly broad white collars; the Whiskered has the sides of neck white, and although this sometimes continues across the nape, the collar is less sharply defined.

Examination of skins suggests that in many specimens the back of the neck is pale grey, though one must be alive to the danger that the make-up of skins in which the neck has been too much retracted may give a false impression. The rump is pale grey in the Whiskered in all plumages; clear white in the juvenile White-winged and the moulting adult, becoming grey in both phases late in the year; and brownish-grey in the juvenile and winter plumages of the Black Tern.

The plumage of the upper-parts is diagnostic in the juveniles. The Black Tern is drab, the slightly paler feather-edgings providing little contrast; the rump and tail are brownish-grey and only a little paler than the darker mantle, which is the same colour as the brown-flecked wing-coverts. The White-winged Black Tern shows the greatest contrast, since the clear white collar and rump isolate the mantle as a dark brown "saddle", darker than the greyish inner wing with its brown-tipped coverts. The mantle feathers have narrow paler brown tips, as have also the tertials and scapulars. The most variegated pattern is found in the juvenile Whiskered, the feathers of the back and scapulars being dark brown with prominent broad buff edgings and often subterminal buff bars or centres. Moreover, there is usually an admixture of new grey feathers, especially on the mantle, quite early in the autumn: two specimens from Valencia, Spain, dated 26th July, already have a considerable amount of pale grey and the rumps, though a little paler than the tails, are definitely grey not white (see plate 36).

In the case of the White-winged Black Tern the white rump persists until late in the year and there can be no doubt that this feature, combined with the "saddle" effect, is diagnostic of young birds for as

long as they are likely to be seen in Europe in the autumn. A bird from Nyasaland dated 9th December has many grey first-winter mantle feathers, and the rump also is grey; a December bird from Transvaal has the mantle and tail murky grey and the rump paler, but not white; and birds from Kenya dated 14th and 30th December have nearly completed the moult (but retain worn juvenile tertials) and their rumps are grey. Birds fairly well advanced into first-winter plumage but still showing white rumps contrasting with grey tails are from Lake Chad, French Equatorial Africa, 1st November; Potchefstroom, South Africa, 24th November; Kuruman, South Africa, 1st December; and Transvaal, 9th December. It would appear that the change takes place in most birds during November.

This plumage is followed by a partial body moult coupled with a complete moult of the remiges during the following summer, which suggests that the White-winged Black Tern does not breed until its second year. Birds from Lake Edward, Uganda, 26th May, Lake Yirol, Sudan, 7th June, and Nyasaland, 25th June, are in a plumage similar to the adult winter. There are three other specimens collected at Lake Edward on 26th May: the first, a male, is still in the winter grey with a few new blackish feathers in the mantle, under-parts and under wing-coverts, and the rump and tail white as in the adult; the second, also a male, is much more advanced in summer plumage, with a blacker back contrasting with white tail and rump, and pied under-parts and under wing-coverts; and the third, a female, is in a condition somewhat intermediate between these two. All are more than half-way through the moult of their primaries, and have new tertials.

The adult White-winged Black Tern also retains the white rump until fairly late in the moult, and until after the new grey rectrices have appeared, but examples in change to winter plumage are easily recognisable so long as a few old black feathers remain in the mantle and under-parts, and in the under wing-coverts. After completion of the moult they can be told from Black Terns by a combination of the characters of breast-markings, head-pattern and size of bill. The size and shape of bill will distinguish them from male Whiskered, but not from females of this species.

FIELD OBSERVATIONS

Whiskered and White-winged Black Terns

D. I. M. Wallace, who has had experience of these terns in winter in Africa, found the Whiskered much more reminiscent of a *Sterna* in flight and general appearance. "It is interesting to note," he writes, "that Mackworth-Praed and Grant (1952) are at pains to distinguish *hybrida* from *Sterna hirundo* and *repressa* rather than from *Cblidonias niger*

and *leucopterus*." When watching and sketching resident Whiskered and migrant Black Terns at Etang Marais in central France on 15th August 1955 he noticed a different flight-action, *hybrida* having little of the wing flexibility so obvious with *niger*. "I remember the flight of *hybrida* as direct and confident," he concludes; and other people have made similar comments.

A. Hazelwood says (*in litt.*) that "*hybrida* is obviously a couple of inches longer overall than the other two marsh terns and this difference is quite apparent in the field. In consequence the wing is relatively shorter and this too shows in giving the flight an appearance mid-way between that of a marsh tern and a *Sterna* one. In fact, *hybrida* seen in Australia gave me little impression of a marsh tern at all for, where I saw it, it was a fluviatile species. I have only once seen the species in Britain but then the "jizz" was quite distinctive and not, I think, to be confused by anyone familiar with *niger* or *leucopterus*".

With regard to the difficult problem of discrimination between the Whiskered and White-winged Black Terns in their very similar winter dress, Wallace makes three tentative points: that the rump, though grey, looks paler than the back in *leucopterus* but uniform with it in *hybrida* (see H. G. Alexander's supporting evidence below); that the White-winged Black Tern has a complete white collar contrasting with grey mantle and black hind-crown, whereas in the Whiskered Tern the nape appears greyish and the collar therefore incomplete; and that the tail always appears slightly forked in *hybrida*, but often appears square in *leucopterus*. As shown on pages 246-247, museum examination tends to confirm the first two points, and tail-measurements suggest good grounds for the last.

H. G. Alexander, who has watched wintering marsh terns in India, says that the upper-parts of *hybrida* appear a silvery grey, considerably paler than winter *niger*, but he has no experience of where to place *leucopterus* in this respect. Museum examination suggests that in *leucopterus* the mantle is also less pure. These, however, are difference of degree and could only be resolved under the most perfect conditions for critical observation, with the tail-character and bill-size used as corroborative features.

Hazelwood makes the point that in view of the marked similarity between Whiskered and *Sterna* terns it is advisable to enter a strong caveat concerning the possibility of confusion between *hybrida* and the "*portlandica*" phase of the Arctic Tern (*Sterna macrura*). This rather rare phase (mentioned in *The Handbook*, vol. v, p. 39) has an oddly adult appearance, with a very similar head to *hybrida*, a black bill of about the same length, and black legs. It differs from *hybrida* in having a complete white collar and white rump, as will be seen from Table I.

NON-BREEDING PLUMAGES OF MARSH TERNS

TABLE I—THE CHARACTERS OF THE THREE MARSH TERNS (*Cblidonias* spp.)
IN NON-BREEDING PLUMAGES

There is also a strong possibility of confusion between *Cblidonias hybrida* and the phase of the Atlantic Tern (*Sterna macrura*) known as "*portlandica*" (see page 248); a fourth column is therefore added for this bird.

	Black Tern (<i>Cb. niger</i>)	White-winged Black Tern (<i>Cb. leucopterus</i>)	Whiskered Tern (<i>Cb. hybrida</i>)	" <i>Sterna</i> <i>portlandica</i> "
Length	9½ inches	9 inches	11 inches	12 inches
Mantle	Dark brownish-grey in juvenile, with no "saddle" effect; lighter brownish-grey in adult	Dark brown "saddle" in juvenile; ash-grey in adult	Variegated brown, buff and greyish in juvenile; silvery-grey in adult	Grey; scapulars fringed brown, some tipped white
Upper wing	Uniform with mantle in both juvenile and adult; dark band joining carpalia	Paler and greyer than mantle in juvenile; uniform with mantle in adult	Pale grey in both juvenile and adult	Grey with white leading edge
Throat	Complete white collar, occasionally suffused with grey in adult	Complete white collar in both juvenile and adult	Pale grey in both juvenile and adult	Complete white collar
Under wing	Pale brownish-grey in both juvenile and adult	Clear white in juvenile; pale grey in adult (but sometimes white in moulting adult)	Pale grey in both juvenile and adult	White
Bill	Grey in both juvenile and adult; often looks "square"	Grey, often looking "square" in juvenile; pale grey in adult (but sometimes white in moulting adult)	Pale grey in both juvenile and adult; always looks "forked"	Whitish (grey outer webs); deeply "forked"
Head	Crown and ear-coverts form black hood in both juvenile and adult; face white	Black ear-coverts isolated in both juvenile and adult; crown flecked white; face tinged yellowish	Forehead white in both juvenile and adult; crown white streaked black; hind-crown to ear-coverts black	Forehead white; crown white streaked black; hind-crown to ear-coverts black
Legs	Long, slender and looking slightly decurved	Short and stubby	Long as head and straight with pronounced gonys in males; short and stubby in females	Long as head and straight with pronounced gonys
Flight	Slim build; full wing-beats; dynamic action	Thick-set build; shallow wing-beats; more leisurely action	Similar to <i>Sterna</i>	As <i>Sterna</i>



FIG. 2. Flight-silhouettes of marsh terns (from photos in *British Birds*, 48: plates 54-56): three left, White-winged Black Tern (*Chlidonias leucopterus*); two right, Black Tern (*Ch. niger*). The former has broader bases to its wings and is a more thickset bird with a squarer tail, a slower and shallower wing-beat, and a shorter bill (see text) (sketches: D. I. M. Wallace)

White-winged Black and Black Terns

A juvenile White-winged Black Tern at Radipole Lake, Weymouth, Dorset, during 19th-23rd August 1959, and one at Hanningfield Reservoir, Essex, during 5th-13th September 1959, were present for part of the time with Black Terns, and some notes on the comparisons may be useful. Only the Black Terns had the dark smudges at the sides of the breast, and their head-markings were more extensive (p. 246). The Black Terns were more uniformly brownish-grey on the upper-parts, rather lighter on the rump but grey, not white, and this difference between the two species was noticeable through field-glasses at well over a hundred yards. In the Radipole Lake birds we saw that the white parts of the head—fore-crown, cheeks and region behind the ear-coverts—were clear white in the Black but had a distinct creamy or pale yellowish suffusion in the White-winged Black Tern. The bill of the Black was long and had a slightly decurved appearance (the stouter bill of the male Whiskered, with its more prominent gonys, would probably not appear decurved), whilst that of the White-winged Black Tern was short and stubby by comparison. Both occasionally gave the impression of having a slightly forked tail, but when fully spread the tail appeared square: there was nothing to choose between the two in this respect.

Both specimens of *leucopterus* were described as having a light grey central panel in the wing. This effect was probably more marked in the Hanningfield bird, since one observer described it as "a shadow" of the upper wing-pattern of the breeding bird and wrongly concluded that "the wings and back were 90 per cent moulted" to winter plumage. D. I. M. Wallace identified this bird as a juvenile, and the absence of any pied effect on mantle and under-parts, and of black in the under-wing, is confirmatory. The difference in wing-plumage should assist in identification: the fore-wing of the Black Terns was very dark, so that in Wallace's words there was "a dark band from carpal joint to carpal joint, broadest between the shoulders" (see plate 36). The paler wing of the White-winged Black Tern, though somewhat darker on the lesser coverts, has a distinct white line along the leading-edge.

Apart from the plumage differences, the Black Tern is a slimmer bird with a quicker wing-beat, the White-winged Black Tern appearing to have a more leisurely flight with noticeably shallower wing-beats and more frequent planing and gliding. The wings of the Black Tern seem narrower at the base (Fig. 2). In the case of the Radipole Lake *leucopterus* there were times when its flight reminded us of a Little Gull (*Larus minutus*), with its blunt, rather thick-set build, broad-based wings and squarish tail, and the same comparison was made quite independently by Wallace when viewing the Hanningfield bird only shortly after seeing an immature Little Gull at Abberton Reservoir, Essex.

SUMMARY

Discussion is made of several characters, actual and putative, for separating the three marsh terns—Black (*Chlidonias niger*), White-winged Black (*Ch. leucopterus*) and Whiskered (*Ch. hybrida*)—in juvenile, first-winter and adult winter plumages. These characters, based partly on museum examination and partly on field-notes, are summarised in Table I on page 249. It must be firmly emphasised that in some cases the conclusions are tentative and need further testing in the field, particularly in the cases of winter Whiskered and White-winged Black Terns, and that this study can only be helpful if used with due caution and with an understanding of the difficulties.

ACKNOWLEDGEMENTS

The observations of a number of people have contributed to this study. I am particularly indebted to D. I. M. Wallace, whose excellent sketches greatly help towards an elucidation of this problem; to A. Hazelwood of the Bolton Museum for assistance with the table and the loan of a specimen of "*Sterna portlandica*"; and to K. D. Smith, H. G. Alexander and I. J. Ferguson-Lees for helpful discussion. Smith, R. F. Moore, A. Quinn and N. Money, together with Miss M. D. Crosby and my daughter Hervör, discussed points with me in the field at Radipole Lake on 20th-21st August 1959. Acknowledgement is also made

to those who submitted observations to the Rarity Records Committee, and whose names will appear in their Reports. I thank Mr. J. D. Macdonald, Keeper of Birds, for access to skins in the collection at the British Museum (Natural History).

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The distribution and numbers of Kittiwakes and Guillemots at St. Kilda

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(Plates 33-34)

INTRODUCTION

THERE ARE several reasons why no attempt has previously been made to describe in detail the distribution and numbers of the Kittiwake (*Rissa tridactyla*) and the Guillemot (*Uria aalge*) at St. Kilda. The colonies are extremely difficult of access, being at the bases of cliffs which are seldom less than 500 feet high, and can be viewed satisfactorily only from a small boat sailing close in. They are scattered along 21 miles of coastline, and wind, swell, tide and fog make systematic survey of this kind very difficult. Even on calm days the motion of the boat is such as to make accurate counting out of the question in many places.

In the first survey of the breeding birds of St. Kilda, Harrisson and Lack (1934) said of Kittiwakes only that there were "colonies of moderate size on the steep lower parts of the cliffs", and of Guillemots, "not uncommon, most colonies like those of the Kittiwakes being on the steep lower parts of the cliffs". Nicholson and Fisher (1940) had a closer yet hastier look at the situation and thought there might be 20,000 breeding pairs of both species, but they mentioned only three different breeding sites of Guillemots and none of Kittiwakes. Williamson (1958) considered that this estimate of Kittiwakes was "much too high". Two other reports (Bagenal 1953, Boyd, Munns and Whitehouse 1956) gave no more information, but in a survey in 1956 (Boyd, Tewnion and Wallace 1957) the general strength of the populations and the location of a few of the major colonies of both species were mentioned. Looking closely at the situation in 1959,

however, it was clear that none of the previous surveys had come near to showing the true status of these two birds at St. Kilda.

In his capacity as the Nature Conservancy's Regional Officer for West Scotland, the author spent most of May 1959 at the islands of the St. Kilda group. During that month the weather was exceptionally fine and, in company with Mr. Murdo MacDonald of Tiree, temporary coxswain of the Conservancy's 18-foot boat *Fulmar*, and others, the author made 3 circumnavigations of the Hirta, Soay and Dun group, 3 return visits to Soay by the Mina Stac passage and 1 by the natural arch passage on Dun, 3 visits to the Boreray group, 2 to the south-west coast of Dun and 2 to Levenish. Only a few trips were made with the primary aim of surveying the Kittiwakes and Guillemots, but notes on these species were made every time and, as the month progressed, gaps became apparent and the need for a systematic review of the whole situation seemed necessary. Accordingly, between 19th and 22nd May all parts of the coast of all the islands and stacks were visited by the author and Mr. MacDonald. All aggregations of Kittiwakes and Guillemots were mapped and rough estimates of numbers made.

METHODS

Twenty-one miles of coastline had to be covered in a few days and as many more miles in reaching and returning from distant colonies on Boreray and Soay. It was clear that in the circumstances one of two procedures had to be adopted: *either* an accurate plot of all the colonies situated over 50 yards apart but with only rough estimates of numbers present, *or* accurate counts as well as plots of just a few more accessible colonies on the north coast of Hirta and the south-west coast of Dun. It was decided to attempt the former: the results would be more comprehensive, would be a contribution to the survey of Kittiwakes throughout British coasts organised by the British Trust for Ornithology in 1959, and would be a good foundation for more detailed work later.

Fulmar was kept where possible within 100 yards of the cliff-bottom; notable exceptions to this rule were on the northern and western walls of Soay and Boreray where the choppy conditions of the sea made it impossible to view the precipices from any closer than 200 yards or more. Speed was reduced when necessary and most of the geos or inlets which did not possess hazardous rocks were visited. The boat was kept continuously under way and, though more attention was proportionately given to larger colonies than smaller, the method of assessment was both rapid and consistent.

Before embarking on the comprehensive survey between 19th and 22nd May, familiarisation counts and estimates of pairs were carried out on the colonies of Dun and at Gob na h-Airde on Hirta, and as the survey progressed the eye became more accustomed and the

judgement more practised. The colonies were categorised as follows: 10 (including 1-10), 20, 50, 100, 200, 300, 400, 500, 1,000. In a survey of this sort it is difficult to say with confidence what the error of the estimate is likely to be. In both species most of the colonies fell within the categories 20, 50 and 100, and the error could be as much as 50 per cent if a colony of 75 were placed in the category of 50.

In the case of the Kittiwakes there was no suggestion of bias and the chances of under-estimating seemed equal to those of over-estimating, so that an error of ± 20 per cent would be realistic on the final result. In the case of the Guillemots, however, there was a much greater chance of under-estimating since many of the nesting ledges were recessed and contained an unknown number of birds out of sight. Some of this under-estimation might be made good by a tendency to over-estimation in colonies fully in view, and also by the inclusion of small numbers of Razorbills (*Alca torda*) with the Guillemots. This Razorbill error is likely to have been small, however, since Razorbills at St. Kilda breed in hidden sites under boulders and crevices; the main colonies are on Dun and Soay and there are smaller colonies on Hirta, Boreray, Stac an Armin and Levenish. It would probably be realistic to assume that anything up to 20 per cent should be added to the final figure for Guillemots.

The nesting sites contained both breeding and non-breeding birds. Coulson and White (1956) showed that in colonies of Kittiwakes in Northumberland and Co. Durham 19 per cent of the birds were non-breeders, and that more than 80 per cent of the nesting sites were occupied by the end of March. Most of the Kittiwake ledges are likely, therefore, to have been fully tenanted and, judging from the amount of courting and treading, the Guillemot ledges were probably also fully occupied. It is again difficult to know whether to label the figures as "birds" or "pairs"; they are, at best, indices obtained by the methods described. The familiarisation counts, on which rapid estimates were subsequently based, were of "pairs" and it would be more realistic to label them all as such. In any case, however, the method was standard and, irrespective of the labelling, the indices give a measure of the comparative sizes of the colonies. Further detailed counting of "pairs", particularly in the larger (and probably more stable) colonies, with subsequent application to the indices, will give a more accurate appraisal of the situation. The presence of non-breeding birds is to some extent made good by the absence of breeding birds in flight, though Coulson (1959) has shown that few non-breeders are to be expected in Kittiwake colonies in late May. A 6-inch map, folded to a handy size, was taken in the boat. The colonies were plotted with an arrow pointing to the spot on the cliffs and the estimate of numbers noted beside it. It was found that the map did not present an exact picture of the coast, but it was good

enough for the purpose of the survey. The colonies were plotted to an accuracy of about 20 yards. In some localities they were positioned very close to each other and in one or two cases there was difficulty in deciding which were and which were not discrete units. Aggregations with more than 50 yards of cliff free from birds between them were judged to be discrete. In the case of the large colonies such as those on the western wall of Boreray, the centre of the colony was plotted.

THE COAST

The outline of the coasts of all the islands was checked with a map measurer on the 6-inch map and found to total approximately 21 miles. Starting at Giasgeir in Caolas an Duin and moving anti-clockwise, the coast of Hirta was marked off in 10 sections each a mile long (except Section 10 which is $1\frac{1}{2}$ miles long). Dun, Soay and Boreray, each of which has a coastline of approximately 3 miles, were similarly marked off. Each mile of coast was given a serial number from 1 to 21 (Figs. 1 and 2). Stac an Armin and Stac Lee were considered together as one (Section 20) and the small stacs, Levenish, Soay Stac, Stac Biorach, Stac Dona and Am Plastair, as another (Section 21). Mina Stac, Bradastac and Sgarbhstac were included in the section of coastline opposite.

The following brief description of the coast is designed to bring out the features of rock formation particularly associated with breeding colonies of Kittiwakes and Guillemots, namely the vertical or near-vertical sections, the ledge systems and the caves. The colonies were, with a few exceptions, situated within 250 feet of the sea. The upper reaches of the cliffs usually slope off on to steep green terraces interspaced with shattered buttresses and towers, or continue upwards as bare vertical walls or vegetation-covered precipices cut across by terraces carpeted with grass and talus.

With the exception of a short distance in Village Bay (Section 1), the entire coast is cliff-bound. Four main categories of cliff were seen: (a) granite walls, (b) gabbro walls, (c) gabbro (and breccia) buttresses and bastions, (d) slabs and beaches.

The granite walls (Sections 2, 3, 4) are vertical and severely undercut (plate 33a). The undercutting probably restricts Guillemot colonisation except in places such as Stac a' Langa which is built of blocks with steep flights of flat ledges, the Bradastac which rises in three broad-ledged tiers, and the base of the great Conachair cliff where long gently-sloping sills give favourable ledges. The Mina Stac is largely unsuitable with unfavourable rock cleavages, plated walls and wispy ledges, but locally there are suitable Guillemot stances. The Kittiwakes might be expected to gain a better hold on the undercut rock, but the faces are very smooth and subject in many localities to seepage

water from above. The Kittiwakes are found packing in with the Guillemots on the finer ledge systems, usually on the periphery of the latter colonies. There are at least a dozen caves, some of the largest of which (under Oiseval) have only small groups of birds, very disproportionate to the size of the portals; others under Conachair have bigger colonies.

The gabbro walls (Sections 5, 14, 15, 16, 17, 18, 19, 20) are vertical and generally undercut (plate 33b). There is a much wider range of conditions in those sections than in the granite, but the smoothness of the rock, the persistent vertical jointing, the steepness of the fractures, the bevelling and the unfavourable overlap of ledges render them to a large extent unsuitable to Guillemots. Kittiwakes might again be expected to have gained a better hold, but they do not appear to have done so. The 1,000-foot walls of Soay (Sections 15 and 16) and Boreray (Sections 17 and 19) and the 500-foot walls of Stac Lee (Section 20) have criss-cross systems of fissures tenanted in the latter two by Gannets (*Sula bassana*). There are probably at least twenty caves, large and small, at the base of the gabbro walls giving more irregular shattering and a greater variety of ledges than in the case of the granite.

The gabbro (and breccia) buttresses and bastions (Sections 1, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 19, 20, 21) probably total more than all the other categories put together and they seem to be, for the most part, unsuitable to both species (plate 34a). Where the tumbling buttresses and bastions meet the gabbro walls there are recessed chasms and caves (the number of which is unknown but probably over twenty). These have favourable ledge systems usually associated with fragmented dykes and sills. This type of coast is best illustrated on the south-west coast of Dun and between Na Cleitean and Gob na h-Airde, where the great smooth bevelled blocks are cut through by steeply angled sills with deep lengthy ledges. Many of the buttresses are plated with thin vertical sheets sometimes favourably overlapped to give flights of irregular ledges.

The slabs and beaches (Sections 1, 3, 4, 6, 10, 11, 14) are very local and constitute a very minor part of the coast (plate 34b). They are generally backed by precipices. In Village Bay and Dun (Sections 1, 11) and the recess of Glen Bay (Section 6) this precipice is composed of drift material and is unsuitable for both species. The beach at Mol Ghiasgar, the ramp at Leac Mhina Stac, the slabs and boulder beach on the east coast of Soay (Section 14) are backed by vertical walls of solid rock (and, in the case of Mol Shoay, by steep talus).

DISTRIBUTION OF KITTIWAKES

The colonies of Kittiwakes are shown in Fig. 1. It is possible that a number of the smaller ones were not nesting aggregations, but merely

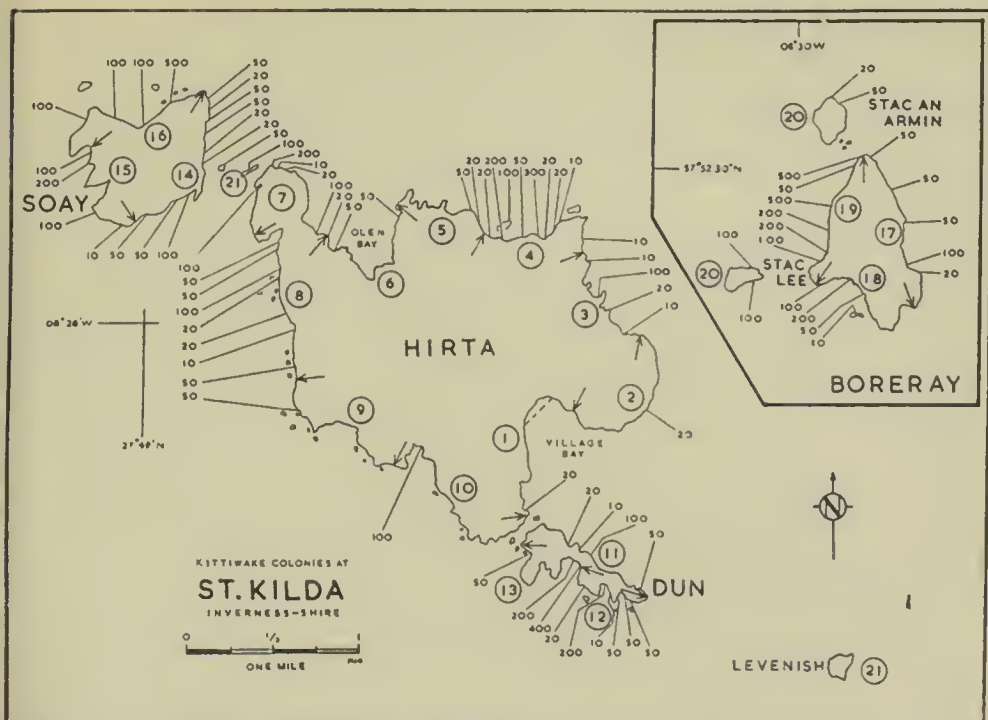


FIG. 1. Positions and sizes of colonies of Kittiwakes (*Rissa tridactyla*) on the various islands of the St. Kilda group, May 1959. Sizes were categorised under 10, 20, 50, 100, 200 and 500+ (page 254). The coastline totals approximately 21 miles (page 255) and the circled numbers are those which were given to different mile-sections (the limits of which are indicated by arrows)

non-breeding birds on perching-sites or future breeding-sites (*cf.* Coulson and White 1956). However, this is unlikely since all seemed to be nesting colonies and it is probable that the non-breeding element, shown by Coulson (1959) to be small, was packing in with the breeding birds.

There were 7,660 pairs (± 20 per cent) estimated in 85 colonies situated at least 50 yards apart. The frequency distribution of colony

TABLE 1—THE SIZES OF COLONIES OF KITTIWAKES (*Rissa tridactyla*) ON THE VARIOUS ISLANDS OF THE ST. KILDA GROUP, MAY 1959

Estimated total number of pairs on each island is also given on the right, but it is considered that these figures may be open to an error of ± 20 per cent (see page 254).

Sizes of colonies								Total colonies	Total pairs
10	20	50	100	200	300	400	500+		
6	11	8	6	2	1	0	0	34	1,980
2	2	5	1	1	1	1	0	13	1,310
1	3	5	6	1	0	0	1	17	1,620
1	1	4	3	4	0	0	2	15	2,330
0	1	2	3	0	0	0	0	6	420
10	18	24	19	8	2	1	3	85	7,660

size takes a binomial form (Table I). There were more colonies of about 50 pairs than of any other size, and 72 per cent of all the colonies fell within the orders 20, 50 and 100. There were more pairs involved, however, in the colonies of the orders 100, 200 and 500 than in those of 50. The largest 3 colonies accounted for 20 per cent of the pairs present.

The largest colonies of about 500 pairs were situated on the gabbro walls of Boreray at Ant-Sail and below Na Roachan (Section 19) and on Soay under Bearraidh na Creige Chaise (Section 16). There were other large colonies in Geo Ghiasgeir (Sections 12, 13) and the south-west geo of Bìoda Mor (Section 12), both on Dun; at Geo na Mol (Section 4), the un-named geo immediately opposite Bradastac (Section 4), Geo Chalum M'Mhurich (Section 7), Geo Chaimbir (Section 7), all on Hirta; at Lianish (Section 15) on the west coast of Soay; at Geo an Araich (Section 18) and below Clais na Runaich (Section 19) on Boreray.

The mile-by-mile analysis of occurrence is shown in Table II. The west coast of Boreray is the stronghold of the Kittiwake at St. Kilda, having in 1959 some 1,700 pairs in 6 colonies spread over 1 mile. Excluding Village Bay (Section 1) and Glen Bay (Section 6), which are almost totally unsuitable for Kittiwakes, the other end of the scale was the south-west coast of Hirta which had only about 150 pairs in 2 colonies in a distance of 2 miles (Sections 9 and 10). The physiological differences between the south-west coast of Hirta and that of Dun, the former fairly smooth and the latter deeply indented, well illustrate the part played by rock formations in determining the occurrence of both the Kittiwake and Guillemot (described below). The structural differences can be demonstrated by measuring the

TABLE II—THE NUMBERS OF COLONIES AND ESTIMATED TOTALS OF PAIRS OF KITTIWAKES (*Rissa tridactyla*) ON EACH MILE OF COASTLINE IN THE ST. KILDA GROUP, MAY 1959

The positions of the numbered sections are marked in Fig. 1.

Hirta			Dun			Soay			Boreray			Stacks		
Mile section	Colonies	Pairs	Mile section	Colonies	Pairs	Mile section	Colonies	Pairs	Mile section	Colonies	Pairs	Mile section	Colonies	Pairs
1	1	20	11	4	180	14	9	410	17	5	270	20	4	270
2	1	20	12	7	890	15	4	410	18	4	360	21	2	150
3	4	140	13	2	250	16	4	800	19	6	1,700			
4	9	730												
5	2	70												
6	3	120												
7	5	530												
8	7	300												
9	1	50												
10	1	100												

TABLE III—THE NUMBERS OF COLONIES AND PAIRS OF KITTIWAKES (*Rissa tridactyla*) AND GUILLEMOTS (*Uria aalge*) AT ST. KILDA, MAY 1959, GROUPED ACCORDING TO THE DIFFERENT POINTS OF THE COMPASS FACED BY THE COAST

The points of the compass are omitted because no substantial tracts of the coast face these directions.

	Miles	Kittiwakes		Guillemots	
		Colonies	Pairs	Colonies	Pairs
N	7	28	2,310	52	6,120
E	4	19	840	21	980
SE	1	1	20	—	—
SW	4	11	1,290	9	780
W	5	26	3,200	30	5,970
All points	21	85	7,660	112	13,850

straight line distances between the ends of each of these 2-mile sections: $1\frac{1}{2}$ miles for south-west Hirta and $\frac{3}{4}$ mile for south-west Dun. The ecological parallel was some 1,140 pairs of Kittiwakes in 9 colonies on south-west Dun, compared with 150 pairs in 2 colonies on Hirta.

In Table III the coast is classified, mile by mile, into sections facing different compass points. Not all the main points are shown: there are no really substantial stretches facing south, for example. Most colonies are situated on the west and north coasts, but there are distinctly more pairs on the west, despite the fact that there are only 5 miles of west coast to 7 of north. There are as many pairs per mile on the south-west coasts as on the north, but distinctly less on the east. The west coast, which faces the prevailing winds from the south-west and which is composed of gabbro walls, buttresses and bastions, is the one most densely colonised by Kittiwakes.

DISTRIBUTION OF GUILLEMOTS

The colonies of Guillemots are shown in Fig. 2. It is probable that some of the smaller of these were not breeding aggregations. For example, there were obvious non-breeding groups on the edge of the ramp at Leac Mhina Stac (Section 4), on steeply bevelled stances between Geo Shunadal on Boreray (Section 17) and at the foot of the western Buttress of Bìoda Mor on Dun (Section 12).

There were 13,850 pairs (+up to 20 per cent) estimated in 112 colonies situated at least 50 yards apart. The frequency distribution of colony size takes a binomial form (Table IV). There were more colonies of about 50 pairs than of any other size, but only about 13 per cent of the total number of pairs were contained in the colonies of 50. The largest 9 colonies accounted for 47 per cent of the pairs present.

The largest colonies of over 1,000 pairs were situated at Geo Chaimbir on Hirta (Section 7), at Lianish on Soay (Section 15), just north of

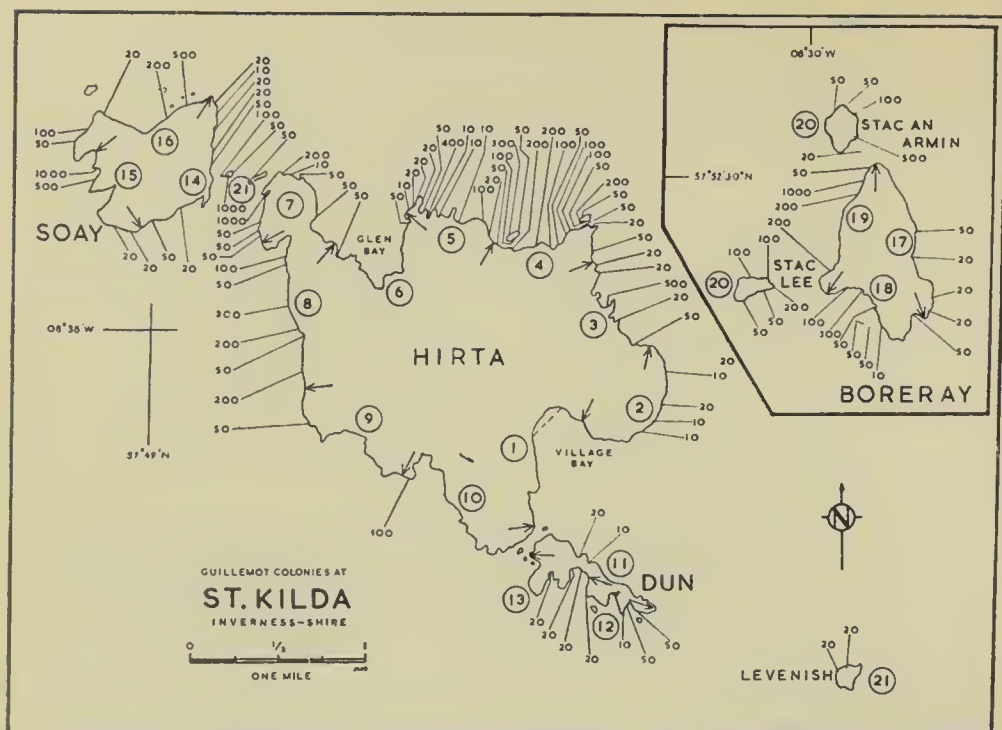


FIG. 2. Positions and sizes of colonies of Guillemots (*Uria aalge*) on the various islands of the St. Kilda group, May 1959. Sizes were categorised under 10, 20, 50, 100, 200 and 500 (page 254). The coastline totals approximately 21 miles (page 255) and the circled numbers are those which were given to different mile-sections (the limits of which are indicated by arrows)

Geo na Tarnanach on Boreray (Section 19), and on the summit of Stac Biorach (Section 21). There were other large colonies at Stac a'Langa (Section 3), Geo na Mol (Section 4), Bradastac (Section 4), Geo Oscar (Section 5), at a point south of Geo na Stacan below the spot-height 892 feet on the ridge (Section 8), opposite Sgeir Mhor below Carn Mor (Section 9), at An Airde on Soay (Section 15), west of Geo Ruadh on Soay (Section 16), at Geo an Araich on Boreray (Section 18), and at Am Biran on Stac an Armin (Section 20).

TABLE IV—THE SIZES OF COLONIES OF GUILLEMOTS (*Uria aalge*) ON THE VARIOUS ISLANDS OF THE ST. KILDA GROUP, MAY 1959

The estimated total number of pairs on each island is also given on the right, but it is considered that anything up to 20 per cent should be added to these figures (see page 254).

	Sizes of colonies									Total colonies	Total pairs
	10	20	50	100	200	300	400	500	1,000		
Hirta	8	10	18	6	6	2	2	2	1	55	6,380
Dun	2	5	2	0	0	0	0	0	0	9	220
Soay	1	7	3	1	1	0	0	2	1	16	2,607
Boreray	1	4	6	1	2	1	0	0	1	16	2,190
Stacks	0	3	6	4	1	0	0	1	1	16	2,460
St. Kilda ('Total)	12	29	35	12	10	3	2	5	4	112	13,850

PLATE 33A. The granite walls of St. Kilda, illustrated by the bottom 350 feet of the Ard Uachdarachd outcrop of Conachair (the highest sea-cliff in Britain), showing the cleavage of the rock, the undercutting, the gullies, the caves and the absence of birds (photo: J. Morton Boyd)

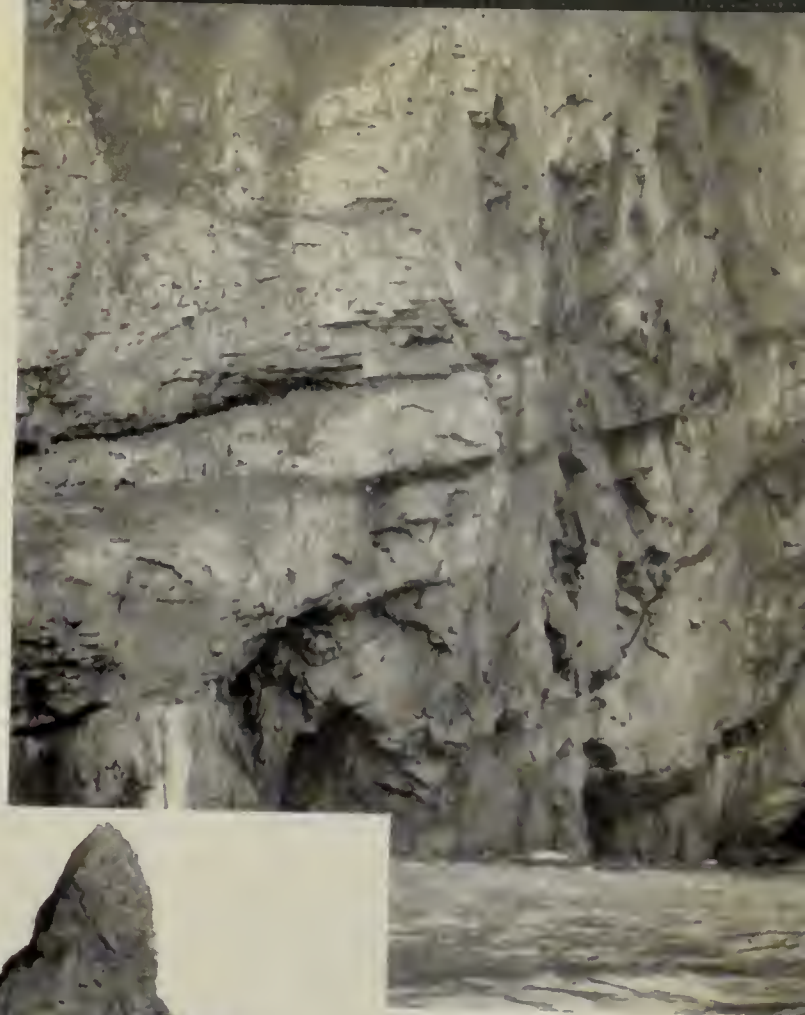


PLATE 33B. The gabbro walls of St. Kilda, illustrated by the 1,250-foot western face of Boreray. The upper ledge systems are crowded with Gannets (*Sula bassana*) and in the bottom 250 feet there is a large colony of Kittiwakes (*Rissa tridactyla*), possibly the largest at St. Kilda (page 256) (photo: J. Morton Boyd)



PLATE 34. Above, the gabbro buttresses and bastions of St. Kilda, illustrated by the 300-foot ramparts of south-west Dun; there are few birds on the outward sunlit faces, but the shadowy geo or inlet in the centre holds colonies of Kittiwakes (*Rissa tridactyla*) and Guillemots (*Uria aalge*). Below, the slabs and beaches of the western part of Village Bay, from Dun, showing the sloping pavements round the shore, which are unsuitable for either species (page 256) (photos: J. Morton Boyd)





PLATE 35. Dusky Thrush
Turdus eunomus, Co. Dur-
 am, January 1960. Above
 and right, note the striking
 periciliary, double breast-
 bands and crescentic flank
 markings (photos: E. S.
 Sinner). The more natural
 posture below also shows
 the heavy bill and the light
 tinge to the wing-coverts
 (ages 275-276) (photo: B. J.
 Bates)





dimw
1960

PLATE 36. Marsh terns in non-breeding plumages: top row, White-winged Black Tern (*Chlidonias leucopterus*); centre row, Black Tern (*Ch. niger*); bottom row, Whiskered Tern (*Ch. hybrida*). The three left-hand birds are juveniles, the rest adults in winter. Note the presence or absence of shoulder marks, the larger size and *Sterna*-like appearance of *hybrida*, and the white rump and dark "saddle" of the young *leucopterus* (pages 243-252) (drawings: D. I. M. Wallace)

ST. KILDA KITTIWAKES AND GUILLEMOTS

TABLE V—THE NUMBERS OF COLONIES AND ESTIMATED TOTALS OF PAIRS OF GUILLEMOTS (*Uria aalge*) ON EACH MILE OF COASTLINE IN THE ST. KILDA GROUP, MAY 1959

The positions of the numbered sections are marked in Fig. 2.

Hirta			Dun			Soay			Boreray			Stacks		
Mile section	Colonies	Pairs	Mile section	Colonies	Pairs	Mile section	Colonies	Pairs	Mile section	Colonies	Pairs	Mile section	Colonies	Pairs
1	0	0	11	2	30	14	7	190	17	4	110	20	10	1,220
2	5	70	12	4	130	15	4	1,540	18	7	610	21	7	1,260
3	5	610	13	3	60	16	5	870	19	4	1,450			
4	16	1,970												
5	11	670												
6	2	100												
7	6	1,460												
8	6	900												
9	1	500												
10	1	100												

Table V gives a mile-by-mile analysis of colonies and pairs. The stronghold of the Guillemot at St. Kilda is the Soay coast (Sections 14, 15 and 16), including the Cambir (Section 7) and Stac Biorach (Section 21): in 1959 this part had 5,280 pairs in 29 colonies over 5 miles. Other areas of high concentration are Conachair (Sections 3 and 4) and Mullach an Eilein (Section 19) on Boreray. On the other hand, the south-west coast of Hirta (Sections 9 and 10) had only two colonies in 2 miles. The comparisons drawn between the distribution of Kittiwakes on south-west Hirta and Dun (Sections 12 and 13) are different in the case of the Guillemot. There were more colonies and more pairs of Kittiwakes on Dun. There were more colonies and fewer pairs of Guillemots on Dun: 7 colonies on the deeply indented coast of Dun and 2 on the comparatively smooth one of Hirta, but only 190 pairs on the former to 600 on the latter.

In Table III the coasts are also classified for the Guillemots, mile by mile, into sections facing different points of the compass. There were more colonies on the north coasts than in almost all the others put together, but there were as many pairs on the west coasts (and many more if the colony on the summit of Stac Biorach were included in west instead of north), despite the fact that there are 2 more miles of north coast than west.

ASSOCIATION OF SPECIES

As the survey progressed it became obvious that, more often than not, Kittiwakes and Guillemots occurred together in the same localities; stretches of coast of a quarter of a mile or more (some parts probably suitable for Kittiwakes) would be passed without coming across a colony, then both species would be found close together. On most

occasions only one colony of each species was involved in each association, but in deep geos such as those on the west coasts of Dun (Sections 12 and 13) and Soay (Section 15) more colonies were involved. An examination of Figs. 1 and 2 together illustrates this.

The Kittiwakes occupied the meagre ledges capable of supporting one or two nests, and the Guillemots the more spacious ones accommodating usually at least 10 pairs. On Stac an Armin, Guillemots were found under the boulders and among the Gannets (in a typical Razorbill niche), but Kittiwakes only on vertical or nearly vertical rock. Even in the most detached situation on the south-west of Hirta (Section 10) both species were found colonising the same locality: 100 pairs of Guillemots at Rudha Mhurich and 100 pairs of Kittiwakes in the chasm of Amhuinn Gleshgil. Both species took equally to the various types of cliff, their distribution on coasts facing different points of the compass was similar, and the main concentrations of both populations had the same approximate locations.

There were 197 colonies of the two species in 1959 (85 Kittiwake, 112 Guillemot) and 125 of these (60 Kittiwake, 65 Guillemot) were associated. There were 47 more or less distinct associations, 33 of which involved one colony of each species and 14 more than one colony of one or both species. The association was thus strongly developed, and it can hardly be attributed to chance. Probably it was caused mainly by the close proximity of nesting ledges favourable to both species, but perhaps some other less obvious factor such as the activity of one species serving as a stimulus to the other, should not be overlooked. The fact that Kittiwakes could have found nesting sites away from the Guillemot ledges, but apparently preferred not to do so, points to some such underlying factor.

DISCUSSION

One of the most striking features of St. Kilda as a sea-bird breeding station is the way in which the Kittiwakes and Guillemots are largely confined to the lower cliffs (while most other species are more or less absent from them) and are not even particularly numerous there. The upper cliffs are, of course, thickly populated with Fulmars (*Fulmarus glacialis*), Puffins (*Fratercula arctica*) and Gannets.

Most of the past observations of sea-birds at St. Kilda have been made from the ridges or cliff-edges of Hirta. That being the case, there is little wonder that no clear ideas were obtained of the colonies of Kittiwakes and Guillemots. By careful observation from the cliff-edges between the Gap (Section 3) and Gob na h-Airde (Section 5), a number of fairly large colonies of both species are visible. Colonies can also be seen on Stac Biorach (Section 21), the east coast of Soay (Section 14), from the cliff-top of the Cambir (Section 7) and, with the help of a strong telescope, some can be seen on the south-west side

of Boreray (Section 18). The major colonies, constituting the greater part of the strength of both species, are hidden from view on the outward facing coasts of Soay (Sections 15 and 16), the Cambir (Section 7), Mullach Bi (Section 8), Dun (Sections 12 and 13), Boreray and the great stacks (Sections 17, 19 and 20). The only site at which visitors to Hirta can, without undue risk, observe Kittiwakes and Guillemots at close quarters from the land, is at the tunnel at Gob na h-Airde (Section 5). The Geo na h-Airde and Geo Oscar cliffs had Guillemots but no Kittiwakes in 1959, but on the Glen Bay side there was a small association of both species.

Coulson and White (1956) showed that the age and size of a Kittiwake colony are closely correlated if the population is increasing and that the rate of immigration into new colonies can be fairly rapid—about 100 pairs per year. This might indicate that the status of the smaller colonies of Kittiwakes is rather unstable from year to year, and future observers might expect to find a slightly different distribution depending on the period of time which has elapsed. The same could also be the case with the Guillemots. Photographs in the literature, however, show that at least some of the colonies of both species seen in 1959, small ones as well as large ones, have been in existence for many years. Such photographs include ones taken by James Fisher and Robert Atkinson when they visited the islands in 1947 (Fisher 1948), by the R.A.F. in 1941 (Fisher and Ververs 1943), by A. M. Cockburn in 1927 (Cockburn 1935), by H. Heathcote in 1898 (Heathcote 1900), by the Kearton brothers in 1896 (Kearton 1897) and by G. W. Whyte in 1884 (Fisher 1952). The abundance of the “Reddag” or Kittiwake and the presence of the “Lavy” or Guillemot as reported by Martin (1698) probably signified that both species were at that time widespread in the archipelago. The large colonies on Boreray (which he probably saw close at hand since he was storm-bound there) and in the Soay Sound (which he also visited) were probably in existence then.

SUMMARY

(1) The colonies of Kittiwakes (*Rissa tridactyla*) and Guillemots (*Uria aalge*) at St. Kilda have not previously been described in detail.

(2) In May 1959 all parts of the coasts of all the islands and stacks were visited and the position of all colonies of these two species at least 50 yards apart were plotted on a 6-inch map. At the same time rough estimates of numbers were made.

(3) Colonies were arranged in the following orders according to the estimates of pairs present: 10, 20, 50, 100, 200, 300, 400, 500 and 1,000. The error in estimates of Kittiwakes was thought to be ± 20 per cent, and up to 20 per cent underestimate for Guillemots.

(4) The coast is described and its suitability for nesting sites for both species is discussed. Over wide areas it appears to be unsuitable for Guillemots, but not for Kittiwakes though many of these areas were untenanted by them also.

(5) There were 7,660 (± 20 per cent) pairs of Kittiwakes in 85 colonies. Most

of the colonies were of the order of 50 pairs, but 3 of the 85 accounted for 20 per cent of the pairs. The west coast of Boreray had the highest concentration: 1,700 pairs in 6 colonies in 1 mile. Most colonies were found on west coasts, facing the prevailing winds.

(6) There were 13,850 (+ up to 20 per cent) pairs of Guillemots in 112 colonies. Most of the colonies were of the order of 50 pairs, but 9 of the 112 colonies accounted for 47 per cent of the pairs. The highest concentration was on the Soay-Cambir coasts: 5,280 pairs in 29 colonies over 5 miles. Most of the colonies were found on the north coasts, but most of the pairs on the west.

(7) There were 197 colonies in 1959 (85 Kittiwakes, 112 Guillemots). 125 of those (60 Kittiwake, 65 Guillemot) were involved in associations of the two species. These associations were usually sited in the deep geos or inlets and composed of at least one colony of each species. There are 47 more or less distinct associations. It is suggested that a factor in this association may be the social stimulus each species derives from the presence of the other.

(8) Kittiwakes and Guillemots are weakly represented at St. Kilda in comparison with other sea-birds. Most of the major colonies of both species are invisible from the ridges of Hirta which are the usual viewing points for visitors. The status of the smaller colonies may vary over the years, but most of the major ones have probably been in existence since before 1700.

ACKNOWLEDGEMENTS

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Some notes on the Rufous Warbler

By Bryan L. Sage

INTRODUCTION

THIS PAPER is based primarily on observations made from May to October 1958 at Khanaqin in eastern Iraq, a border town on the banks of the Alwand River in the foothills of the Jebel Hamrin Mountains, about 90 miles north-east of Baghdad. When I arrived in the area incubation was already under way, so my notes do not cover the periods of courtship display and nest-building.

I use the name Rufous Warbler for this bird only because this is the one under which it appears in most British books, including *A Field Guide to the Birds of Britain and Europe* (1954) and the *Check-List of the Birds of Great Britain and Ireland* (1952). The race occurring at Khanaqin is *Erythropygia (Agrobates) galactotes familiaris*, whilst the races on the British List are *E. g. galactotes* and *E. g. syriacus*, the latter being called the Brown-backed Warbler by Witherby *et al.* (1938).

TAXONOMIC POSITION

It may seem out of place to discuss taxonomy in a paper based on field observations, but in the present case the latter are of value in assessing the affinities of the species. The Rufous Warbler was included by Witherby (*op. cit.*) and most other taxonomists of the inter-war period in the Sylviinae (Old World warblers), where it was placed in the monotypic genus *Agrobates*; originally Temminck (1820) had named the typical race in the genus *Sylvia*. Meinertzhagen (1949), whilst agreeing that it should be in the Sylviinae, pointed out the complete lack of any characters separating the genus *Agrobates* from the Ethiopian genus *Erythropygia* and therefore merged the two, the latter being the older name and therefore having priority. However, Chapin (1953) considered that *Erythropygia* was more correctly assigned to the Turdinae (thrushes, chats, etc.), and Vaurie (1955) concurred with this view. Thus, in his most recent work Vaurie (1959) put this species in the Turdinae, in the genus *Cercotrichas*, and called it the Rufous Bush Robin. He placed this genus after the wheatears (*Oenanthe*) and Blackstart (*Cercomela*), and before the rock thrushes (*Monticola*).

I am of the opinion that the *Cercotrichas* bush robins may be considered as a borderline group, in fact a connecting link between the Sylviinae and the Turdinae, their main affinities being with the latter. So far as the Rufous Warbler is concerned, its chief resemblances to the Sylviinae would seem to be the unspotted juvenile plumage and the marked similarity of the young bird to the adult, but unspotted

juvenile plumages (as well as spotted ones) are found in some turdine genera like *Oenanthe*. The song also bears a certain similarity to that of the Garden Warbler (*Sylvia borin*), but songs and call notes often vary geographically within the same species and are thus not conclusive evidence of systematic relationship.

The strongly graduated and rounded tail suggests affinities to *Cisticola* (fan-tailed warblers), *Prinia* (graceful warblers) and *Scotocerca* (scrub warblers), as is well illustrated by the drawings of the tails of representatives of these genera in Meinertzhagen (1954, p. 216). This resemblance may well be the result of adaptive convergence rather than any close phylogenetic relationship, however. I have seen species from all these genera in the field and the Rufous Warbler does not resemble them at all closely in most other respects. Its stout and powerful bill is totally unlike that of any of the Old World warblers and its general behaviour, as I shall show later, is more in line with that of many of the Turdinae. In addition, when studying the Blackstart (*Cercomela melanura*) at Aden, I was much struck by the great similarity between certain aspects of its and the Rufous Warbler's behaviour, particularly the habit of fanning out the tail with a flicking motion and jerking the partly opened wings forward so that the longest primaries almost touch the ground (see under GENERAL CHARACTERISTICS). Neither the Blackstart nor the Rufous Warbler flexes the legs and "bobs" the head and body like *Oenanthe* species.

HABITAT

In the Khanaqin area the Rufous Warbler inhabited riverain scrub (sallow, poplar, acacia, etc.) by the Alwand River; young date palm gardens where there was some rough undergrowth; and irrigated gardens with oleander bushes, eucalyptus and palm trees, lawns and flower beds. The present observations were made mainly in the last type of habitat. A. Stubbs (*Brit. Birds*, 40: 335-336) was quoted as stating that "at Habbaniya it is essentially a bird of the palm groves, although occasionally it is to be found nesting in gardens and hedgerows". Habbaniya is about 60 miles west of Baghdad.

GENERAL CHARACTERISTICS

This is a large and distinctive species, slightly bigger than a Wheatear (*Oenanthe oenanthe*). Its most striking feature is its long rounded tail. This is bright chestnut in colour and all but the central feathers have white tips and a black subterminal band. The bill is strong and powerful; the legs are long and the stance is very upright. The gait is a fast run, and in this connection it is desirable to point out that, whereas B. W. Tucker (Witherby, *op. cit.*) gave among the characters of the Rufous Warbler "frequently hopping about on ground" and Milne *et al.* (1952) state that one seen on the Kent/Sussex border "hopped

along the shingle", I never saw this species hop. However, clearly both methods of progression must be used.

The Rufous Warbler's tail is in perpetual motion and is frequently cocked vertically above the back, moved slowly up and down like that of a wagtail (*Motacilla* sp.) or depressed and spread fanwise to the fullest extent. Occasionally it may even be laid almost horizontally along the back. When on the ground, the bird has a very characteristic habit of holding its wings in a partly opened and drooping position, so much so that the tips of the primaries often scrape on the ground; from this position they are frequently flicked rapidly forwards. The similarity of this action to that indulged in by the Blackstart was mentioned earlier. This wing movement of the Rufous Warbler is made necessary by the tail action: the length of the primaries is such that unless the wings are partly opened or drooped they would tangle with the tail when this is spread.

NEST AND EGGS

As stated earlier, incubation was already in progress when I arrived at Khanaqin. Four nests were located between 21st and 25th May, three of these in oleander bushes at heights varying from 18 inches to 5 feet, and one in a eucalyptus tree at a height of 7 feet. In all cases the nests were fairly substantial structures of coarse grass, roots and a few leaves of eucalyptus, and generally lined with goat hair. Three of the clutches, when complete, consisted of only two eggs and the fourth of but three. Stubbs (*loc. cit.*) found a number of clutches of five eggs and four of six eggs at Habbaniya, so there would appear to be considerable variation. The eggs in the nests under observation all hatched between 27th May and 7th June, but as the dates of laying were not known it was not possible to check the incubation period.

POST-FLEDGING PERIOD

Whilst in the nest the young were fed by both parents, but after they had fledged procedure varied according to the number of them surviving. Of the four pairs under observation, three had two juveniles surviving, whilst the other had one only. The pair with c/3 hatched all the eggs successfully, but one of the young fell from the nest when five days old and was eaten by ants. Two of the pairs with c/2 had no mishaps, but the remaining pair with c/2 lost one young from an unknown cause after hatching.

In the cases of the three pairs with two juveniles each, each adult looked after and fed one bird only. The single juvenile of the other pair was attended indiscriminately by both adults. In connection with the former it is perhaps not without significance from the point of view of relationships to draw attention to the work of Snow (1958), who showed that in Blackbirds (*Turdus merula*) the male and female each

feed different *individual* young after fledging. I believe this to have been what happened with the Rufous Warblers at Khanaqin, although as I was not able to ring the juveniles I cannot be certain that each adult always had charge of the same *individual*. The parents, each with its attendant juvenile, often searched for food within sight of one another, and in every case where I was able to keep both adults under observation at the same time I found that each always returned to its own juvenile and made no attempt to give food to the other. It was, however, a frequent occurrence for each adult and attendant juvenile to feed in areas so far apart that the casual observer would not have known that they were of the same family unit. The close attachment of each juvenile to the adult was most marked, the former following every move of its parent and keeping a short distance in the rear the whole time.

The case of the pair with only one juvenile was most interesting. This bird was fed by both parents who often searched for food together and returned simultaneously to feed it. Generally, however, the adults split up and searched in different areas, returning at irregular intervals to the juvenile. Occasionally the young bird would follow one or other of the adults, running close behind, and shiver its wings and jerk its tail each time its parent halted. For most of the time, however, it was left on its own and during these periods it called incessantly with a high pitched note which I found to be audible up to about 40 yards.

FOOD AND FEEDING METHODS

The majority of the food was taken on the ground. A frequent item in the diet was the large black ant *Messor barbarus* (Formicidae) which was taken in quantity. Other hymenopterous prey specifically identified were *Trogaspidia catanensis* and *T. ballioni* (Nitullidae), and the wasp *Polistes hebraeus* (Vespidae). Small lepidoptera were also taken occasionally, e.g. the Small Mauve Blue (*Zizeeria knysna*). The Rufous Warbler's powerful bill enabled it to deal with quite large insects and a species of grasshopper about two inches long was often snatched up, as well as Mole Crickets (*Gryllotalpa gryllotalpa*) (Gryllidae) and the stick insects *Mantis religiosa* (Mantidae). Earthworms (Lumbricidae) formed a large percentage of the food given to the young.

Feeding methods varied according to the prey. Ants, grasshoppers, Mole Crickets and various other insects were pursued and taken on the ground, and the birds' dexterity in catching the grasshoppers was quite remarkable. Lepidoptera were generally caught in flight. Many small Diptera and Hymenoptera were picked from flowers, the bird sometimes hovering with rapidly beating wings and fanned tail in order to achieve this. Earthworms were sometimes located by

probing in soft ground and on one occasion I counted 32 holes made by a Rufous Warbler in nine square inches of soft earth. When a worm was located the bird would frequently hurl the earth aside by strong jerks of its powerful bill, a form of behaviour certainly not associated with the true warblers. On other occasions worms were hunted in a manner remarkably similar to that employed by the Blackbird, a series of fast runs interspersed by pauses with the head cocked to one side, then a quick jab with the bill.

AGGRESSIVE DISPLAY

My observations suggest that the Rufous Warbler maintains and defends a territory until the young are self supporting. Presumably this is done so that a regular and satisfactory supply of food is available without competition. The arrival of any other individuals of the species in the feeding area immediately triggered off a series of aggressive reactions from the bird whose territory had been invaded. In all such displays that I witnessed there was a standardised aggressive posture (see Fig. 1). The owner of the territory (it was assumed that the male took the aggressive action) would run or fly towards the intruder and, when a short distance away, would adopt a very upright posture in front of its rival. In this posture the tail was fully fanned

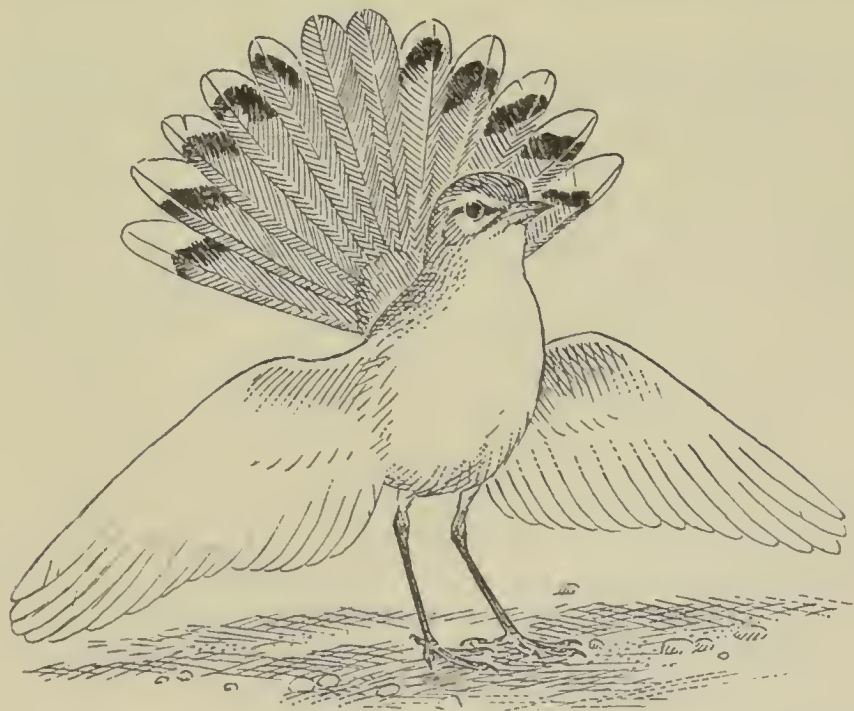


FIG. 1. Aggressive posture of male Rufous Warbler (*Erythropgyia* or *Agrobates galactotes*) towards territorial intruder: upright stance, tail fanned and moved up and down, wings spread and drooped with undersurfaces facing forwards and primaries almost touching the ground (see text) (sketch: Robert Gillmor)

and constantly moved up and down, while the wings were fully spread and slightly drooped so that the tips of the longest primaries almost touched the ground and at the same time were turned outwards so that the undersurfaces faced forwards. This attitude would be maintained for a few moments, after which the wings would be folded and the tail depressed and closed. From this position the bird would run backwards and forwards in front of the intruder with lowered head and puffed out feathers, and this in turn would be followed by (a) a quick dash at the intruder or (b) a repeat of the first posture followed by a dash forwards.



FIG. 2. Defensive posture of intruding Rufous Warbler (*Erythropygia* or *Agrobates galactotes*) towards aggressive territory owner: squatting stance, tail fanned and depressed (or occasionally raised vertically), wings drooped and slightly opened, head stretched forwards and bill gaping wide (see text) (sketch: Robert Gillmor)

Occasionally the intruding bird would fly away at an early stage in the proceedings, but generally a form of counter display or defensive behaviour would be enacted. This defensive posture had two variations. In the most frequent form (see Fig. 2) the bird would squat close to the ground with the tail fully fanned and depressed, the wings drooped and slightly opened, and the head and neck stretched forwards with the bill gaping wide. In the less common variation of this attitude the tail would be raised vertically instead of depressed. The primary purpose of this attitude appeared to be to present the bright orange-yellow interior of the mouth towards the aggressor, and in those few instances where the tail was held vertically the effect was most startling with this orange-yellow framed by the black and white tipped rectrices. On every occasion that I witnessed this defensive behaviour on the part of the intruder, it merely served slightly to delay the owner of the territory from making the quick dash forwards, but when it finally did so the intruder always flew off and I never observed any actual physical combat. In those cases where both birds of the pair were in the same general area when an

intruder arrived, the presumed female took no active part in the proceedings.

I was much struck by the similarity of some of the postures described above to those used by the Blackbird in certain circumstances. That part of the Rufous Warbler's aggressive behaviour where it runs backwards and forwards with depressed tail, lowered head and puffed out feathers is very similar to what may be seen in the communal display of male Blackbirds (Lack 1941). The Blackbird also sometimes uses the bright orange-yellow of the inside of the mouth in threat display (Lack and Light 1941).

ACKNOWLEDGEMENTS

I am indebted to Mr. Robert Gillmor for so ably preparing Figs. 1 and 2 from my field notes.

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Notes

Piracy by Gadwall.—On 30th December 1959, near Cley, Norfolk, we watched four Gadwall (*Anas strepera*) worrying a drake Red-crested Pochard (*Netta rufina*), apparently with the aim of robbing it of its food. They followed it very closely and whenever it dived they hunted about anxiously, trying to keep track of its position under water. The Red-crested Pochard was surfacing with large pieces of vegetation and each time the Gadwall immediately closed in to try to take the food. They were successful on at least one occasion during the half hour that we watched. Sometimes one or two of the Gadwall

would break away, but there was always at least one in attendance. The Red-crested Pochard did not seem disturbed by this behaviour and did not allow itself to be dominated; although they followed it closely, the Gadwall appeared a little nervous in their attempts at robbery.

There were other Gadwall on the lake and we noticed that several Coots (*Fulica atra*) and an immature Goldeneye (*Bucephala clangula*) were being worried in the same way, though not with the same persistence. This may have been because these birds were not bringing large pieces of food to the surface as was the Red-crested Pochard. About 250 Mallard (*A. platyrhynchos*) were also present, but they showed no sign of behaving like the Gadwall.

M. HUDSON, T. G. PIERCE and J. H. TAVERNER

[We believe that behaviour of this kind is not uncommon, but there seem to be no published references to it. Through Mr. Hugh Boyd of the Wildfowl Trust, Dr. P. A. Johnsgard informs us that in his experience Gadwall and Wigeon (*A. penelope*) are particularly prone to act like this. He suggests that it may be because they are less ready to dive than are most other dabbling ducks.—EDS.]

Food-pass by immature Peregrine in autumn.—At 6.45 a.m. on 1st September 1959, on Bardsey Island, Caernarvonshire, my attention was attracted by two Peregrines (*Falco peregrinus*) which were flying overhead and calling repeatedly. One was carrying what appeared to be a small mammal of vole size in its talons. The other, following closely, flew up from below and twisted sideways with its feet towards the first bird. A food-pass, like that between male and female or adult and young in spring and summer, was attempted and failed. The two birds flew on, still calling a ceaseless “kek-kek-kek”, and a second attempt was made, this time successfully, the prey being passed from foot to foot. Immediately, they both ceased calling and parted. The one which now had the food flew on towards the sea, while the other turned back inland. This latter bird, the one which had originally been carrying the food, was seen to be in immature plumage and I took it to be in its first-winter dress. Unfortunately the plumage of the recipient of the food was not noted, but it seemed very curious that an apparently young bird should be passing food to another out of the breeding-season in this way. It should perhaps be added that Peregrines did not nest on Bardsey in 1959. SUSAN COWDY

[As in the case with some other display actions and songs, the Peregrine's food-pass (which is part display) is sometimes recorded in autumn and I suggest that these birds may well have been a young pair in their second year, i.e. hatched in the summer of 1958. One-year-old Peregrines will sometimes pair, display and make nest-scrapes

without laying eggs. Although the bird which passed the food was still in juvenile plumage, the first full moult of the Peregrine is a very gradual and variable affair; as a result, while some youngsters have fully moulted into adult plumage by June or July of the year after that in which they were hatched, others do not seem to moult at all until the last three or four months of that year.—I.J.F.-L.]

Display of Greenshanks in winter.—On two occasions in the 1959-60 winter I witnessed display by two Greenshanks (*Tringa nebularia*) on the Gann estuary, Dale, Pembrokeshire. At about 11 a.m. on 4th December 1959 when a falling spring tide was still in the estuary, a Greenshank was standing at the water's edge where a tongue of the salting formed a narrow promontory and, beyond a shallow channel, an island. The salting was rather densely covered with dead and withered glasswort (*Salicornia* sp.) about six inches high. Another Greenshank joined the first bird and they proceeded to walk, one about a length behind the other, in a slightly crouching attitude with head, back and tail horizontal and in line, but the legs not flexed. They walked quickly on the bare mud at the edge of the stream and weaved their way through the glasswort, changing places once or twice. After a minute or two the leading bird did a little upward jump, flapping and raising its wings high above its back. Then both performed in this way, at first separately, later sometimes together. After a few minutes the jumps became more frequent and higher, and the area covered extended into the stream, the birds wading out up to their bellies. Some of the jumps became short flights to about three feet high. Once one bird appeared to attempt to alight on the other's back. Between the jumps both made little jabs at the water with the tips of their bills. The intensity of the display subsided gradually and they drifted apart. I heard no note uttered throughout the performance, which occupied fully ten minutes. A Redshank (*T. totanus*) settled very near the Greenshanks during the display, provoking a slight threat from the nearest, but it was ignored when it withdrew no more than a couple of yards.

At about 5 p.m. on 15th March 1960 I noticed two Greenshanks standing close together, facing outwards, in shallow water at the edge of the stream, within fifty yards of the place where I had seen the display in December. They turned towards the bank, ran for three or four yards side by side up the muddy shore, here with scattered tufts of channel wrack (*Pelvetia canaliculata*) which afforded no cover, turned about and ran back into the stream, one a little behind and to one side of the other. On the run up they held themselves in a normal erect posture, but on the run down their heads were lowered a little, but not sufficiently to be described as "rail-like". As they halted in the stream they jumped upwards, flapping their wings and turning to face

one another, without giving an impression of sparring. They did two or three jumps and then stood side by side, dipping their bills to the water. The display, except for the dipping of the bills, was repeated twice. After the third performance they began to feed in a desultory way and drifted apart, and soon afterwards flew a short distance in different directions to feed in earnest. As before, they were silent. The whole incident lasted no more than five minutes.

Greenshank displays (in the breeding-season) have been described in detail by D. Nethersole-Thompson (*The Greenshank*, 1951) and there is a summary (from his then unpublished notes) in *The Handbook*. The upward jumps in both my observations appear to be "little bill-to-bill leaps in air . . . also sometimes a 'leap-frog' display, male jumping over female or vice versa" in a modified form. The pursuits on 4th December correspond with *The Handbook's* "in pursuit of female along ground both birds crouch like rails and male partly fans tail", except for the fanning of the tail and the less emphasised crouching attitude. On the second occasion the runs up and down the beach apparently differ rather too much from the pursuit display for them to be a modification: the striking aspect of this performance was the exact repetition of the actions (except the dipping of the bills). Nethersole-Thompson suspected that mated birds might sometimes winter together, and on the breeding grounds found less excitement shown in displays between birds previously mated than in those of new matings. The stretch of the stream where I saw display had held two Greenshanks all the winter; they were usually well apart, but sometimes within 20 yards of one another. Two were present to at least 27th March, and one to 6th April.

T. A. W. DAVIS

Sandwich Tern in the Wash in December.—On 8th December 1959, during a period of widespread gales round the British Isles, we briefly saw a Sandwich Tern (*Sterna sandvicensis*) at close range at the Witham Outfall, Lincolnshire. It is exceptional for this species to occur in the British Isles between late October and the end of March, and there seem to be, in fact, only two previously published December records, one in Yorkshire in 1875 (*The Handbook*, V: 21) and another inland in Somerset in 1945 (*Brit. Birds*, 39: 93). November records are only slightly more frequent. MICHAEL BARRY and DAVID PORTER
[Full identification details have been supplied.—Eds.]

Lesions on leg of Rook.—In connection with the short paper on fowl pox in a Carrion Crow (*Corvus corone*), by R. H. Poulting (*Brit. Birds*, 53: 174-175), I would mention that on 15th March 1928 I caught an adult Rook (*C. frugilegus*) in a trap at Wilmslow, Cheshire. It had excrescences on both legs, but not on the feet, very similar in appearance to those in Mr. Poulting's photograph (plate 24). In

every other respect the bird appeared normal and healthy. When I came to ring it I found that size 3, the usual one for the species, was much too tight a fit and even the size 4 I had to use was none too big. In trying first to fit a size 3 I made a slight abrasion of the incrustation and it bled a little. In the absence of any examination of the growth it is of course impossible to attribute it to fowl pox virus but, as I have said, it looked very similar to what the Carrion Crow was suffering from.

EDWIN COHEN

Dusky Thrush in Co. Durham.—At 10.45 a.m. on 12th December 1959 an unusual thrush was noted at Hartlepool, Co. Durham. It was watched for thirty minutes by R. T. McAndrew and G. Proctor and for fifteen minutes by the writer. Notes and sketches were taken and it was subsequently identified as a Dusky Thrush (*Turdus eunomus*). It was larger than a Redwing (*T. musicus*) and could be distinguished in flight by its lighter and more chestnut colour. The following features determined the identification: typical thrush shape but with a heavier bill; brown upper-parts; conspicuous whitish superciliary contrasting with dark brown lores and ear-coverts; buff-edged secondaries and wing-coverts forming a light mark along the wing; cream-white throat; blackish pectoral band with another broken one below it; grey-white under-parts with heavy blackish crescentic markings on flanks; and dark tail. When first found it accompanied a Mistle Thrush (*T. viscivorus*), two Fieldfares (*T. pilaris*), a Redwing and a male Blackbird (*T. merula*).

It was seen the following day for a short time at 3 p.m. The area was then not visited again until the 19th when the bird was noted to favour a school playing field near the sea. On 20th December it was seen by J. A. Bailey, D. G. Bell and P. J. Stead and on 10th January 1960 it was caught in a mist net by E. S. Skinner and others, and ringed by P. Reid. It was considered to be a male in first-winter plumage. The following detailed description was compiled from notes taken in the field and in the hand:

Size of Song Thrush (*T. philomelos*). *Upper-parts*: crown brown with dark and light streaks; nape brown with dark streaks; broad white square-ended superciliary flecked grey and extending from bill to side of nape; lores, ear-coverts and cheeks dark brown; whitish behind and below eye; mantle brown with dark streaks; rump and upper tail-coverts chestnut. *Wings and tail*: scapulars dark brown, edged chestnut, tipped white; lesser coverts brown; medium coverts dark brown edged buff; greater primary coverts very dark brown with inconspicuous lighter edges; greater secondary coverts dark brown edged buff; secondaries brown edged buff; primaries brown with lighter tips, chestnut on outer webs, this extending to 2 mm. below the wing-coverts on the 4th and 5th; tail dark brown. *Under-parts*: throat creamy-white, this colour extending to the side of the neck in the form of a quarter collar; rest of under-parts grey-white; feathers on breast black-brown edged white forming a heavily blotched breast band with another narrower one, broken at the centre, below it;

moustachial streak from bill to breast band on right side and from lower malar region to breast band on left side; a black-brown mark on the side of the neck joined the moustachial streak at the side of the lower throat, this being broadly bordered whitish below on the right side, but joined to the breast band on the left side; feathers on flanks black-brown edged white forming conspicuous crescent-shaped marks; under tail-coverts brown broadly edged white, forming indistinct crescent-shaped markings; axillaries white with a pink-chestnut wash. *Soft parts*: bill heavy, upper mandible dark brown, blackish at tip, lower mandible brown with basal two-thirds yellow; gape and inside of mouth yellow; iris dark brown; legs and feet brown-grey. *Measurements* wing: 128 mm., tarsus 34.5 mm., tail 68 mm., bill from skull 17 mm. *Wing-formula*: 3rd primary longest, followed by 4th, 2nd and 5th in that order; 3rd, 4th and 5th primaries emarginated.

The accompanying photographs (plate 35), which were taken when the bird was caught on 10th January, show clearly the broad supercilary, the two breast bands, the crescent-shaped markings on the flanks and the heavy bill.

The following points are also of interest. The call, rarely heard, was Blackbird-like but less deep—a clucking note uttered only in flight either singly or up to three times in succession. A wheezy note, reminiscent of a Starling (*Sturnus vulgaris*), was also heard in flight. The food appeared to be almost exclusively earthworms, though bread was taken occasionally. The general habits recalled those of a Fieldfare, the upright stance, the holding of the bill at a 20° angle and the occasional cocking of the tail on alighting being characteristic. Short grass areas were the favoured habitat and, apart from the field mentioned above, it also fed on an adjacent bowling green and grass plot, rough grassland near-by usually being avoided.

The easterly gales which prevailed during the week previous to the bird being found would, no doubt, account for the appearance of this bird, now regarded as only the second fully authenticated record of the species in the British Isles. It was last seen on 20th February after a stay of ten weeks, during which time it was seen by many observers.

B. J. COATES

Two Bonelli's Warblers in Caernarvonshire.—On the evening of 18th August 1959 a bird that was subsequently identified as a Bonelli's Warbler (*Phylloscopus bonelli*) was caught in the Cristin Heligoland on Bardsey Island, Caernarvonshire, by A. J. Dartnall. The general impression was of a slender leaf warbler that was very grey above and very white below, with prominent greenish-yellow edges to wings and tail feathers and a pale rump of a similar but less contrasting colour; the head was rather pointed, the lower mandible and legs were remarkably pale, and the iris was almost black with a brownish tinge. We took a detailed description by artificial light before releasing the bird at dawn (and this was checked by daylight the first time it was retrapped):

Upper-parts: forehead, crown and nape greyish faintly tinged with yellowish-green, especially on the forehead; back grey-brown tinged with yellowish-green; rump greenish-yellow. *Tail and wings:* tail feathers dark with broad greenish-yellow fringes on outer webs, these narrowing towards the tips (outer pair with very narrow pale fringes); 1st and 2nd primaries dark; remainder of primaries and all secondaries dark with greenish-yellow fringes to outer webs (except on the primary emarginations); tertiaries similar but more broadly fringed; primary coverts also dark fringed with greenish-yellow and other wing-coverts similar but more broadly fringed. The fringes on the remiges formed a greenish-yellow patch on the closed wing. *Sides of head:* pale and rather indistinct stripe above and through the upper eye-line; cheeks similar to eye-stripe, becoming a little darker on upper ear-coverts and in centre of lores. *Under-parts:* generally whitish; axillaries tinged yellow, this colour extending a little on to the flanks; under-wing whitish tinged yellow at the carpal. *Soft parts:* upper mandible horn colour, darker at tip and paler on cutting edges; lower mandible very pale, tinged flesh, slightly darker at tip; legs pale yellowish-flesh and very slender. *Measurements:* right wing 62 mm. (primaries straightened), tarsus 19.5 mm., bill 7.5 mm. from feathers. *Wing-formula:* 4th primary longest, 3rd -0.5 mm., 5th -1 , 6th -4 , 2nd -5 , 7th -7 , 8th -9 , 1st 4 mm. longer than primary coverts; 3rd, 4th and 5th emarginated.

This bird remained on the island until at least 5th September. During that period it was trapped five more times and it is interesting to note the increase in weight during its recuperation. Two hours after it was first trapped (20.30 hours GMT, 18th August) it weighed 6.75 gm. and the other weights recorded were as follows (beginning with that at release the following morning):

19th August (03.00 hours)	6.35 gm.	31st August (11.00 hours)	7.95 gm.
21st August (12.00 hours)	6.95 gm.	2nd September (11.30 hours)	8.2 gm.
29th August (13.30 hours)	8.9 gm.	5th September (09.00 hours)	9.0 gm.

During these eighteen days a number of observers spent many hours watching the bird in the field. It frequented willows, brambles and reeds, but was not at all skulking. It fed constantly, taking what were presumably insects off the undersides of leaves, and also hovering and flycatching, diving to within inches of the ground and then returning to the same or another perch. Once it picked a small brown caterpillar about half an inch long off a branch and had great difficulty in swallowing it. It was seen with Willow Warblers (*Ph. trochilus*) and Chiffchaffs (*Ph. collybita*) and appeared noticeably smaller and plumper. It quite frequently used a single or double harsh and metallic note "chereek", reminiscent of a Wren (*Troglodytes troglodytes*) and, though softer and higher pitched, equally penetrating; and it also had a more typical *Phylloscopus* "hoo-eet" and a ticking note.

On 10th September 1959, five days after this bird was last seen, a second (unringed) Bonelli's Warbler was found by G. P. Hawthorn in brambles just north of the Observatory. The main feature distinguishing it from Willow Warblers was its white under-parts. No contrasting rump-colour was noted in the field. G. P. H. was joined

by G. J. Langsbury and the bird was headed towards the Lane Heligoland where it was caught. We compared it in the hand with the detailed description taken of the first one over three weeks earlier and it was found to be almost identical except for a slightly clearer eye-stripe. Even its weight, 6.75 gm., was exactly the same as that of the first bird when it was originally caught. Measurements and wing-formula were as follows:

Measurements: right wing 60 mm. (primaries straightened), tail 48 mm., tarsus 19.5 mm., bill 9 mm. from feathers and 12.5 mm. from skull. *Wing-formula:* 3rd and 4th primaries equal and longest, 5th —0.5 mm., 6th —4, 2nd —6, 7th —6.5, 8th —8, 1st 5 mm. longer than primary coverts; 3rd, 4th and 5th emarginated.

This second bird, which was not seen after 10th September, was examined in the hand by Kenneth Williamson, among others. These are the fifth and sixth records of this species in the British Isles.

R. W. ARTHUR

Recent reports and news

By I. J. Ferguson-Lees and Kenneth Williamson

The items here are largely unchecked reports, and must not be regarded as authenticated records. They are selected, on the present writers' judgement alone, from sources generally found to be reliable. Observers' names are usually omitted for reasons of space and in case a report is subsequently rejected, and none of the items will be mentioned in our annual Index. Readers are asked to submit anything of interest as quickly as possible.

This summary is mainly concerned with late April and early May, though it also includes a few interesting summer-visitor reports from the first half of April and touches on one or two other subjects that extend back into the winter.

RARE BIRDS AND OTHER UNUSUAL OCCURRENCES

The three most unexpected species of the period were all sea-birds and all picked up dead: an adult male Ross's Gull (*Rhodostethia rosea*) found at Seaton Delaval (Northumberland) on 30th April; an adult Brünnich's Guillemot (*Uria lomvia*) in winter plumage at Middleton Sands, near Morecambe (Lancashire), on 15th April; and a Madeiran Little Shearwater (*Procellaria baroli baroli*) between Cley and Blakeney Point (Norfolk) on 1st May. There are only two previous British and eleven other European records of Ross's Gull (see also *Brit. Birds*, 52: 422-424) and Brünnich's Guillemot has not been recorded with absolute certainty in the British Isles for many years and not at all previously on the west coast of England; while there are only twelve previous records of the Little Shearwater and some of those are no longer regarded as acceptable.

Most of the other unusual birds have also been aquatic species. A Gull-billed Tern (*Gelochelidon nilotica*) was identified at Selsey Bill (Sussex) on 23rd April and other were suspected there about that period. The same place produced a White-winged Black Tern (*Chlidonias leucopterus*) in summer plumage on 27th April—flying with three Black Terns (*Ch. niger*); a second White-winged Black Tern (*cf.* page 244) was identified at Lee-on-Solent (Hampshire) on 11th May, travelling east during a big movement of terns which was widely reported along the south coast and reflected in an inland passage of Black Terns. A Night Heron (*Nycticorax*

nycticorax) that had been shot was found dead at Radipole Lake, Weymouth (Dorset), on 18th April; and in this connection it should be remembered that one was seen in Devon three days later (*Brit. Birds*, 53: 239). A Purple Heron (*Ardea purpurea*) came in at Cuckmere Haven (Sussex) on 27th April and was watched for an hour and a half. There were two more reports of Cranes (*Megalornis grus*): a single one stayed at Lissett (Yorkshire), between Bridlington and Driffeld, from 16th (probably 14th) to 27th April; and two first-summer birds were seen at Brancaster (Norfolk) on 28th and 29th April. About then also, on 1st May, five Demoiselle Cranes (*Anthropoides virgo*) flew over at near-by Cley: the secondaries on the right wings of the latter appeared to have been clipped and no doubt they were escapes (*cf. Brit. Birds*, 53: 239). There was also a male Kentish Plover (*Charadrius alexandrinus*) at Cley on the same day.

Great Shearwaters (*Procellaria gravis*) are uncommon in spring and so the occurrence of about 15 off Cork Harbour on 18th April is noteworthy. An Iceland Gull (*Larus glaucoides*) was an unusual visitor to Portland (Dorset) on 16th April and two inland reports of the normally coastal Little Gull (*L. minutus*) might be mentioned here: an adult in summer plumage at Pitsford Reservoir (Northamptonshire) on 26th April and an immature at Wilstone Reservoir, Tring (Hertfordshire), on 1st May. A Spotted Crake (*Porzana porzana*), evidently a migrant, was seen between two patches of *Spartina* on the mudflats of the Medway at Funton (Kent) on 20th March.

The only completely non-aquatic birds we can include in this section are a Goshawk (*Accipiter gentilis*) on the Pembrokeshire coast near the Cardigan border on 8th March, an Alpine Swift (*Apus melba*) over the Brent Reservoir (Middlesex) on 7th May, and a Bee-eater (*Merops apiaster*) at Hill Head, Farcham (Hampshire), on 11th May. Even the one unusual Passerine was a water-bird—a Black-bellied Dipper (*Cinclus c. cinclus*) on Fair Isle from 7th to 10th April (trapped and ringed).

SUMMER VISITOR ARRIVALS

The feature which particularly stands out in a year when the bulk of the summer migrants have tended to be on the late side—apart from the Chiffchaffs (*Phylloscopus collybita*) in February/March and small numbers of other species—has been the wide-spread early arrival of Swifts (*Apus apus*). Normally the main influx of this species does not start until the very end of April, but this year a large-scale movement was conspicuous on the 24th and continued for the next week. The first Swifts reported were three at Portland (Dorset) on the 23rd. The next day, the 24th, 100 were recorded there, a steady flow began in Devon and the south-west, the first ones were seen in most other south coast counties, and the species also appeared inland in Surrey, Middlesex, Somerset, the Midlands, Hereford, Pembrokeshire (Skokholm) and as far north as Nottinghamshire and four localities in Derbyshire. By the 26th gatherings of a hundred or more were reported from the Midlands.

The night of 23rd/24th April and the ones that followed seem also to have brought in a lot of the nocturnal migrant species. For example, Wood Warblers (*Phylloscopus sibilatrix*), Nightingales (*Luscinia megarhynchos*) and Pied Flycatchers (*Muscicapa hypoleuca*) all appeared in the south-west in numbers at this time. Another biggish influx, which appears to have extended up the east coast as far as Scotland, took place on the night of 3rd/4th May and brought Swifts and many warblers to south and east Scotland.

Up to 23rd/24th many of the night migrants had been very scarce—Whitethroats (*Sylvia communis*) in particular being generally late—but odd individuals of some species continued to arrive early. Perhaps the most widely reported of these was the Grasshopper Warbler (*Locustella naevia*). This bird is not normally regarded as appearing much before the end of April and *The Handbook* itemises records up to the 12th. In 1959, however, the first report came from Bedfordshire on 8th April, followed by Devon and Somerset on the 13th and something of an influx on the 14th. A similar picture emerges this year. The first reports came on 9th

April from Hampshire and Nottinghamshire; the former was at Christchurch Harbour and was followed by two more there on the 16th and 17th (those on the 9th and 16th being ringed). The species was then noted in Northamptonshire on the 11th, in Devon from the 14th, in Kent and Warwickshire on the 16th and in Somerset on the 17th. Doubtless there are other records which we have not received and it does seem that we must begin to revise our ideas on the arrival of this bird.

Among other early records the following seem worth mentioning: a Turtle Dove (*Streptopelia turtur*) at Sevenoaks (Kent) on 5th April; a male and two female Red-backed Shrikes (*Lanius cristatus collurio*) at Hams Hall (Warwickshire) on the 20th; Nightingales at Stockbury (Kent) and Weybourne (Norfolk) on the 10th; Sedge Warblers (*Acrocephalus schoenobaenus*) in Kent, Northamptonshire and Nottinghamshire on 6th, 9th and 10th respectively; and Pied Flycatchers in Derbyshire on the 14th and 15th, in Kent on the 16th and in Warwickshire on the 17th. Some early records of Common or Arctic Terns (*Sterna hirundo* or *macrura*) were detailed last month (*Brit. Birds*, 53: 240) and to those should be added three at Selsey (Sussex) on 3rd April, two at Portland (Dorset) on the 4th and one at Folkestone (Kent) on the 5th.

Quite a lot of Hoopoes (*Upupa epops*) were recorded during the period in south coast counties—for example, five in Devon during April. There were also some in Ireland (Cos. Cork, Waterford and Wexford), one or two in East Anglia as far north as Thornham (Norfolk), and, more interesting, one at Kinver (Staffordshire) on 9th April and another found shot at Huddersfield (Yorkshire) on 3rd May.

SHAGS, SISKINS AND COLLARED DOVES

The position with regard to Shags (*Phalacrocorax aristotelis*) in the south-east was interesting throughout the early part of the year. There was a small wreck from end-January to early March (with recoveries in Norfolk, Suffolk, Essex and Kent of ones ringed on the Farnes and the Isle of May). Not very many were noted inland—nothing like the number in February and March 1958 (*Brit. Birds*, 51: 84 and 131)—but nevertheless there were up to eight at Staines (Middlesex) in early February and still two there in late April. More striking were the west-to-east movements reported throughout March at Selsey Bill (Sussex) and, more recently, some remarkable gatherings at Seaford Head (Sussex): 21 on 6th April rose to 31 on the 20th, 30 on the 28th, 46 on the 29th and 52 on 2nd May, all apparently immatures. This is not a common bird in Sussex and these numbers are quite exceptional.

Finally, two species worth keeping an eye on. The large numbers of Siskins (*Carduelis spinus*) which came into the British Isles last autumn resulted in an unusually high winter population in many parts of the country. Now these birds are reported as staying late into April in several parts of England. In Surrey, for example, birds were paired, males were singing and courtship feeding was noted in mid-April. It seems worth watching for breeding. At the same time there are signs of a new push by the Collared Dove (*Streptopelia decaocto*). This species has now been recorded breeding in some eight counties from Kent to Morayshire and it has occurred in the last year or two in a number of other places as far west as the Isles of Scilly and Bardsey (Caernarvonshire). Just recently, however, Collared Doves have been seen in several new localities and two migration records are perhaps particularly significant: one appeared on Fair Isle on 18th April and two very tired birds arrived on Blakeney Point (Norfolk) on 4th May. We suggest that these birds should be specially watched for this summer—though not without remembering the strong possibility of confusion with the domesticated Barbary Dove (*S. risoria*). After this season it is hoped to publish a full summary of the spread in Britain since Norfolk was colonised in 1955-57 (*Brit. Birds*, 50: 239-246).

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1960

CHASED

Kestrel pellets at a winter roost

By T. A. W. Davis

DURING THE WINTER of 1958-59 I collected 113 pellets of Kestrels (*Falco tinnunculus*) beneath roosts in a disused quarry near the Dale estuary, Pembrokeshire. The quarry is on a steep bracken-covered hillside surrounded by farmland and the saltings and lagoons of the estuary. Buzzards (*Buteo buteo*) have also roosted in it from time to time, and both they and Kestrels frequently hunt over the hillside. One Kestrel roosted irregularly in the quarry from about mid-November 1958 and by 3rd February 1959 a second roost was sometimes occupied. From the middle of the latter month both were used regularly until the end of March and then early in April roosting ceased there altogether. Neither Kestrels nor Buzzards roosted in the quarry during the following winter (1959-60).

In 1958-59 I visited the quarry at irregular intervals throughout the winter—twice in November and not less than three times in other months. On several occasions in December and January no pellets were found and for two periods of ten days the roost was probably not occupied.

I measured 73 undamaged pellets. The lengths varied from 12 mm. to 45 mm. and the widths (the averages of two diameters at right angles) ranged from 9 mm. to 16.5 mm. The average was 31.4×11.3 mm., which should be compared with the 33×14 given by Utten-dörfer (1939) and Ellis (1946). Eleven (15%) of the pellets I found were less than Ellis's minimum length of 20 mm. (though only three of the eleven were under 18 mm.). Small pellets were usually without the characteristic taper of the larger ones and were without a "tail".

Ellis examined a series of 206 Kestrel pellets taken at a roost in the West Riding of Yorkshire between July 1944 and March 1945. It was clear from his paper that the winter was mild, but he did not comment on the state of the populations of small mammals. In

BRITISH BIRDS

TABLE I—CONTENTS OF PELLETS OF KESTRELS (*Falco tinnunculus*)
PEMBROKESHIRE, 1958-59

	Field Vole (<i>M.</i> <i>agrestis</i>)	Bank Vole (<i>C.</i> <i>glareolus</i>)	Shrews (<i>Sorex</i> spp.)	Fur not identi- fied	Birds	Beetles	Much earth
November 30th (11 pellets)	2	—	—	8	—	11	—
December 31st (15 pellets)	2	2	2	6	2	15	2
January 30th (16 pellets)	3	—	2	8	3	10	1
February 14th (18 pellets)	2	3	1	7	3	6	1
March 29th (49 pellets)	12	4	1	27	7	21	31
April 16th (4 pellets)	1	—	—	2	—	2	1
November-April (113 pellets)	22	9	6	58	15	65	36
Percentage of pellets con- taining	19%	8%	5%	51%	13%	57%	32%

The dates in the first column are those of the last collection in each month. Thus the 49 pellets collected during March had accumulated since 14th February. In November one pellet consisted largely of vegetable fibre; in December one consisted of fibre and earth and another contained the feathers of a Blackbird (*Turdus merula*); and in March one contained the culmen of a Yellowhammer (*Emberiza citrinella*).

Pembrokeshire the 1958-59 winter was mild and the populations of mice and voles were low, but shrews were abundant. As the paragraphs which follow show, there is close agreement in several ways between the two series of pellets. In addition, we both found comparatively few in the period November-January (suggesting that the roosts were not used every night) and in each case in the last part of the winter the roost was occupied by two birds instead of only one.

In both studies the principal prey found was the Field Vole (*Microtus agrestis*) (see Table I). In Pembrokeshire this species constituted 60%, and in Yorkshire more than 80%, of the small mammals identified. Several factors help to explain the difference between the two percentages. I found more pellets without fur than Ellis did and more of those with fur did not contain the cheek teeth necessary for the identification of small rodents. As a result, I identified only 37 small mammals in 113 pellets against Ellis's 78 in 138 collected during the corresponding period. At the same time I found a relatively high proportion of other mammals (see Table I). Of other species, Ellis recorded Long-tailed Field Mice (*Apodemus sylvaticus*), Common

Shrews (*Sorex araneus*) and Water Shrews (*Neomys fodiens*). I found Bank Voles (*Clethrionomys glareolus*) and shrews; the latter probably included both Common and Pygmy Shrews (*S. minutus*), but I had only lower jaws which are not sufficient for differentiating between them.

During a cold spell Ellis noted a definite increase in the number of pellets containing bird remains, but apart from this we both found that birds were taken infrequently (see Table I). Feathers in the pellets Ellis examined were very thoroughly comminuted, whereas I found (as we both did in the case of fur) that the degree of comminution varied from scarcely any to powdery. I was able to identify a Black-bird (*Turdus merula*) from feathers and a Yellowhammer (*Emberiza citrinella*) by its culmen.

I found very small quantities of fish scales in six pellets during March and April, and on 29th March 1959 I saw a Kestrel hover over the edge of a tidal lagoon of the Dale estuary, though it did not stoop. A Kestrel has been seen to catch a fish (Batten 1959) and shells of marine crabs have been recorded in pellets (Richards 1947).

Both Ellis and I found some beetle chitin in most pellets—he in all autumn pellets; I in all to the end of December, in nearly all (in diminishing amounts) in January and in up to 40% or 50% thereafter (see Table I). The only chitin identified in either series was of dung beetles (*Geotrupes* sp.); in Pembrokeshire these were Dumble-dors (*G. stercorarius*). These beetles were so frequent that they may well be the food next in importance after Field Voles. Even in the summer pellets Ellis identified only *Geotrupes* among beetles. The only other insect remains identified were an earwig (Forficulidae) in Ellis's series and a larval head in mine.

Ellis noted vegetable matter only as the remains of the contents of birds' crops and he did not record earth in any pellets. While the beetle content was high I had few with any appreciable amount of earth, but when beetles were scarce these earthy pellets became frequent and a few consisted almost entirely of earth. Thus until 14th February only 7% contained much earth, whereas in the period 15th February-29th March 60% did (see Table I). The earth was sandy, as though the clay fraction had been eliminated. I also found a little vegetable matter in a few pellets, such as blades of dead grass, and Uttendörfer (1939) recorded similar waste material. One pellet consisted almost entirely of fibre (probably comminuted grass) and another, very firmly compacted, of about equal quantities of fibre and earth. Tightly-packed grass has been found in the stomach of an emaciated dead Kestrel (Jackson 1954), while in another case (Ash 1955) much grass was discovered with other food in the stomachs of two out of six Kestrels examined: it was believed that the grass had been eaten purposely, a conclusion supported by the presence of comminuted

fibre in pellets. I might add that at different times I have seen a number of Buzzard pellets consisting mainly of earth, and once several grass pellets among normal ones at the roost of a Tawny Owl (*Strix aluco*).

Uttendörfer (1952), from his own observations and analyses of long series of pellets in Bavaria and from the north European literature, concluded that Long-tailed Field Mice constitute 80% of the Kestrel's food and that House Mice (*Mus musculus*) and Field and Bank Voles are taken in small numbers, with shrews and Moles (*Talpa europaea*) only occasionally. The two series of pellets discussed in this paper show that in Britain the Field Vole may at least sometimes take the place of the Long-tailed Field Mouse as the principal prey and it should be noted that I did not find the latter species at all. In other respects there are no important differences. Birds were taken in both Pembrokeshire and Yorkshire on a scale which agrees with Uttendörfer's findings. Lizards were not noted by either Ellis or myself, but an odd one occurred in several of Uttendörfer's (1939) analyses and he also frequently recorded a greater variety of insects. These included grasshoppers, crickets, mole-crickets, weevils and cockchafer larvae, but *Geotrupes* beetles were still the commonest.

SUMMARY

(1) The analysis of 113 pellets of Kestrels (*Falco tinnunculus*) from a roost in Pembrokeshire showed Field Voles (*Microtus agrestis*) to be the commonest prey. Bank Voles (*Clethrionomys glareolus*) and shrews (*Sorex* spp.) were taken frequently, birds occasionally, and Dumble-dor Beetles (*Geotrupes stercorarius*) regularly in early winter.

(2) In late winter, when beetles became scarce, many pellets contained much earth.

(3) A comparable series of pellets from Yorkshire (Ellis 1946) showed an even greater dependence on Field Voles, but a general survey (Uttendörfer 1952) concluded that Long-tailed Field Mice (*Apodemus sylvaticus*) form 80% of the Kestrel's food.

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Bird of prey numbers on a Hampshire game-preserve during 1952-1959

By J. S. Ash

INTRODUCTION

IN THE EIGHT YEARS from 1952 to 1959 I made counts of all the hawks I saw during visits to an estate of approximately 4,000 acres in west Hampshire. The species involved were Buzzard (*Buteo buteo*), Sparrowhawk and Goshawk (*Accipiter nisus* and *gentilis*), Marsh, Hen and Montagu's Harriers (*Circus aeruginosus*, *cyaneus* and *pygargus*), and Hobby, Peregrine, Merlin and Kestrel (*Falco subbuteo*, *peregrinus*, *columbarius* and *tinnunculus*). Times were noted to the nearest five minutes for each of the 1,378 visits—a total of 5,027 hours and 25 minutes, and an average of 3.65 hours per day. Unfortunately, the duration of visits was not evenly distributed throughout the year (Table I), and in 1952 no records were kept in January and February or from May to July. Incidentally, there are about 4,760 hours of potential hawk observation in a calendar year, so that the total here represents a little more than one year's continuous observation.

TABLE I—MONTHLY DISTRIBUTION OF HAWK COUNTS ON A WEST HAMPSHIRE ESTATE, 1952-1959

Counts were made in every month during these years, except in 1952 when January, February, May, June and July were missed.

	Total days observation	Total hours observation	Average hours observation per day
January ..	139	482.17	3.47
February ..	135	397.17	2.94
March ..	128	402.25	3.14
April	117	421.33	3.60
May	134	532.50	3.97
June	101	366.58	3.63
July	71	231.50	3.26
August ..	65	219.33	3.37
September ..	132	621.83	4.71
October ..	94	376.92	4.01
November ..	119	375.42	3.15
December ..	143	600.42	4.20
Totals ..	1,378	5,027.42	3.65

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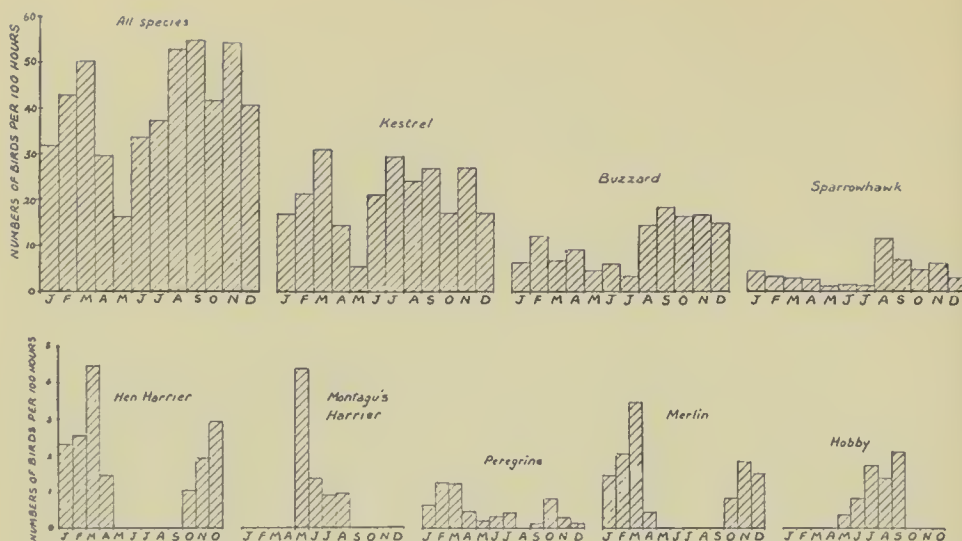


FIG. 1. Month-by-month counts per 100 hours of various species of hawks on a west Hampshire estate, 1952-1959: Buzzard (*Buteo buteo*), Sparrowhawk (*Accipiter nisus*), Hen and Montagu's Harriers (*Circus cyaneus* and *pygargus*), and Hobby, Peregrine, Merlin and Kestrel (*Falco subbuteo*, *peregrinus*, *columbarius* and *tinnunculus*). Note the difference in scale between the upper and lower rows of histograms.

The data from which this figure was drawn are shown on pages 288-289

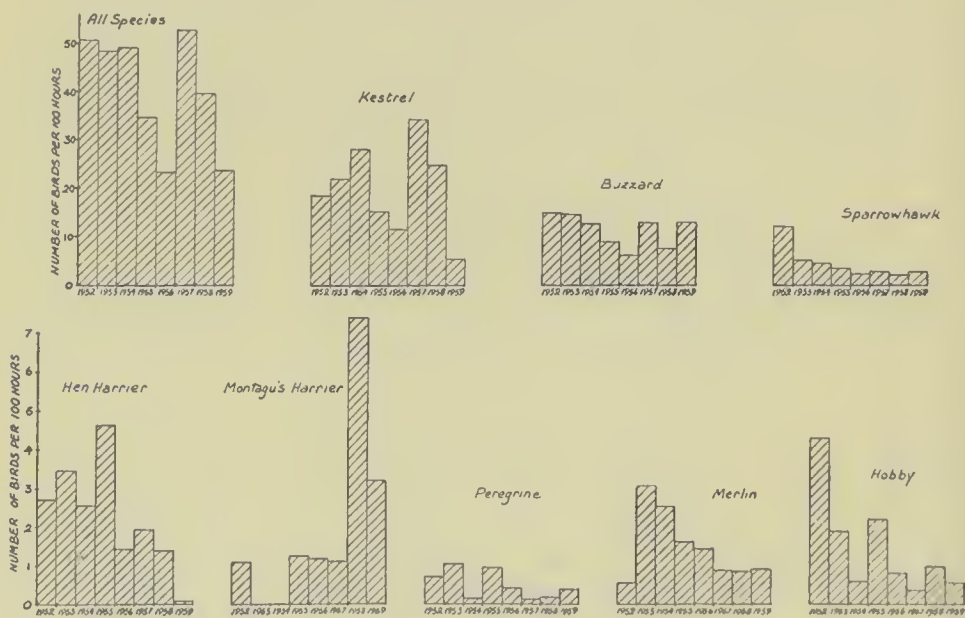


FIG. 2. Year-by-year counts per 100 hours of various species of hawks on a west Hampshire estate, 1952-1959: Buzzard (*Buteo buteo*), Sparrowhawk (*Accipiter nisus*), Hen and Montagu's Harriers (*Circus cyaneus* and *pygargus*), and Hobby, Peregrine, Merlin and Kestrel (*Falco subbuteo*, *peregrinus*, *columbarius* and *tinnunculus*). Note the difference in scale between the upper and lower rows of histograms. The data from which this figure was drawn are shown on pages 288-289

None of these visits was for the express purpose of observing hawks, except in four or five cases in May and June 1958 to watch breeding Montagu's Harriers. Otherwise, visits covered a multitude of other activities, not all equally favourable for hawk observation, including the intensive study of a population of Partridges (*Perdix perdix*)—which involved close observation from car or hide, census work from car or on foot, shooting days, nest searching, trapping, etc.—and a survey, mostly at weekends, of the breeding species of the open down and arable land.

Visits were made at all times of the day from dawn to dusk in each month, and on some occasions the time to begin or end observation had to be arbitrarily decided on, depending on the light and whether a hawk was likely to be seen after or before a certain hour. At all other times, observation periods were recorded only when the well-defined estate boundary was crossed. Besides the weeks when I was away from the district (part of March, August and October in most years), observation was restricted for short periods during two local outbreaks of foot-and-mouth disease, once in a spell of exceptionally wet weather when the water-logged ground was inaccessible to cars, and during a time of petrol rationing. Part of the records for one month was lost.

It may be thought that certain of the above activities would provide few opportunities to see birds of prey. It is actually extremely difficult to measure the relative likelihood of seeing them, for instance, when sitting in a closed car watching a covey of Partridges on the ground and when walking across open country on the alert for flying birds during census work. In fact, however, probably only half the total number of hawks were seen by direct observation and the remainder as a result of clues obtained from other species. Partridges are very alert to the presence of suspicious-looking birds and many hawks were noted only because of their reactions. In this respect it is worth mentioning their crouching and head-turning for a high-flying Peregrine that is perhaps just visible to the naked eye, or their headlong dash for a hedgerow on the distant approach of a harrier.

The duration of visits varied from eight hours down to half an hour. On the longer stays there was difficulty at times in deciding whether a bird had already been seen or whether it was a new individual. A deliberate effort was made not to count the same bird twice on the same day. This conservative policy undoubtedly led to underestimates, especially with the very large number of Kestrels in the autumn of 1957. On the other hand, while Kestrels are usually seen singly outside the breeding season, Buzzards frequently group together and so with them this error is less likely to occur. In addition, individual Buzzards and harriers especially are sometimes recognisable by a

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Months and total hours observation		Buzzard		Sparrow- hawk		Goshawk		M H nos.
		Hawk nos.	100 hours	Hawk nos.	100 hours	Hawk nos.	100 hours	
January	482.17	30	6.22	22	4.56			
February	397.17	48	12.06	14	3.52			
March	402.25	27	6.71	12	2.98			
April	421.33	39	9.26	12	2.85			I
May	532.50	25	4.69	6	1.13			
June	366.58	22	6.00	6	1.64	[1]	0.27	
July	231.50	8	3.46	3	1.30			
August	219.33	32	14.59	26	11.85			
September	621.83	116	18.65	44	7.08	I	0.16	
October	376.92	63	16.71	18	4.78			
November	375.42	63	16.78	23	6.13			[1]
December	600.42	92	15.32	19	3.16			[1]

Species	1952			1953			1954			1955	
	No.	Hours	100 hours	No.	Hours	100 hours	No.	Hours	100 hours	No.	Hours
Buzzard	41	276.83	14.81	114	772.33	14.76	88	691.83	12.72	69	748.25
Sparrowhawk	34	276.83	12.28	43	772.33	5.57	33	691.83	4.77	29	748.25
Goshawk		276.83		1	772.33	0.13		691.83			748.25
Marsh Harrier		276.83			772.33			691.83		[1]	748.25
Hen Harrier	5	183.75	2.72	16	460.92	3.47	9	356.50	2.52	20	429.50
Montagu's Harrier	1	93.08	1.07		311.42			335.33		4	318.75
Hobby	4	93.08	4.30	6	311.42	1.93	2	335.33	0.60	7	318.75
Peregrine	2	276.83	0.72	8	772.33	1.04	1	691.83	0.14	7	748.25
Merlin	1	183.75	0.54	14	460.92	3.04	9	356.50	2.52	7	429.50
Kestrel	51	276.83	18.42	170	772.33	22.01	194	691.83	28.04	115	748.25
Totals	139	276.83	50.21	372	772.33	48.17	336	691.83	48.57	259	748.25

The data used in Figs. 1 and 2 on page 286 are shown above. The columns headed "100 hours" give the numbers of birds seen per hundred hours. In the lower set of data the total hours of observation vary from species to species because some are resident birds while others are confined to the winter or summer alone.

characteristic of plumage or moult. As residents, and prolonged visitors, are seen repeatedly from day to day, total counts do not represent individuals.

The type of country in this part of Hampshire is particularly attractive to hawks. Down one two-mile-long boundary of the present area lie 2,000 acres of mixed mature woodland in a single block. Buzzards breed in this, and although it is a game preserve a pair of Sparrowhawks

BIRDS OF PREY ON A HAMPSHIRE ESTATE

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Montagu's Harrier		Hobby		Peregrine		Merlin		Kestrel		Total	
Hawk nos.	100 hours	Hawk nos.	100 hours	Hawk nos.	100 hours	Hawk nos.	100 hours	Hawk nos.	100 hours	Hawk nos.	100 hours
				3	0.62	7	1.45	81	16.80	154	31.94
				5	1.26	8	2.01	86	21.65	171	43.05
				5	1.24	14	3.48	126	31.32	202	50.22
				2	0.47	2	0.47	61	14.48	123	29.19
23	4.32	2	0.38	1	0.19			31	5.82	88	16.53
5	1.36	3	0.82	1	0.27			79	21.55	117	31.92
2	0.86	4	1.73	1	0.43			69	29.81	87	37.58
2	0.91	3	1.37					53	24.16	116	52.89
		13	2.09	1	0.16			169	27.18	344	55.32
				3	0.80	3	0.80	67	17.78	158	41.92
				1	0.27	7	1.86	103	27.44	205	54.61
				1	0.17	9	1.50	106	17.65	245	40.80

2:

100 hours	1957			1958			1959			Counts used in calculations
	No.	Hours	100 hours	No.	Hours	100 hours	No.	Hours	100 hours	
6.18	95	730.50	13.00	44	561.08	7.84	69	518.83	13.30	All months
2.47	22	730.50	3.01	12	561.08	2.14	14	518.83	2.70	All months
		730.50		[1]	561.08	0.18		518.83		All months
0.14		730.50		1	561.08	0.18		518.83		All months
1.45	9	457.75	1.97	5	359.42	1.39	1	331.92	0.30	Jan-Apr, Oct-Dec
1.19	3	272.75	1.10	15	201.67	7.44	6	186.92	3.21	May-Sept
0.79	1	272.75	0.37	2	201.67	0.99	1	186.92	0.53	May-Sept
0.41	1	730.50	0.14	1	561.08	0.18	2	518.83	0.39	All months
1.45	4	457.75	0.87	3	359.42	0.83	3	331.92	0.90	Jan-Apr, Oct-Dec
11.54	250	730.50	34.22	139	561.08	24.77	28	518.83	5.40	All months
23.63	385	730.50	52.70	223	561.08	39.74	124	518.83	23.90	All months

occasionally rears a brood there. The rest of the area, once open rolling downland, is now mostly under cultivation. Many hedgerows, some with trees, small copses and belts, a few young plantations, and one mature conifer planting, all help to provide cover and look-out posts for hunting or breeding hawks. As a game preserve the area holds a high population of Partridges and Pheasants (*Phasianus colchicus*), which must act as an attraction to predators. Also, because predators are maintained at a low level, the breeding success of small Passerines must be greater and their progeny must be attractive to birds of prey. In the summer this patchwork distribution of a variety of habitats attracts a very big population of breeding birds, and in the winter the

crops and open grassland are used by extremely large numbers of winter visitors and residents—especially Woodpigeons (*Columba palumbus*), Lapwings (*Vanellus vanellus*), Starlings (*Sturnus vulgaris*), Skylarks (*Alauda arvensis*), finches and Turdidae (all favoured prey species).

To the north and west there are very extensive tracts of similar country, mostly kept. To the east and south there are almost equally extensive tracts of heathland and the New Forest, mostly unkept.

There have been very few unidentified hawks, and except for three "probables", these have been ignored in this discussion. Two Marsh Harriers and a Goshawk are included because there was merely a shadow of doubt about their identification. The other doubtful cases would not amount to one per cent of the total hawks observed.

In order to make comparisons from month to month and year to year, many counts have been converted to the number of hawks per 100 hours, irrespective of the number of hours of observation. Some of the main points which have emerged from these counts are discussed below under species headings, with the data summarised in Figs. 1 and 2 as a basis. Other relevant points of interest are introduced where necessary.

BUZZARD

The Buzzard was the second most numerous species (one per 8.90 hours of observation), being slightly more than half as numerous as Kestrels. The trend shown in Fig. 1 is for larger numbers in the last 4-5 months of the year, smaller numbers in the first four, and the lowest in the breeding season during May-July. This general trend held good for the first three complete years 1953-1956 (see Fig. 2), but after that there were very odd fluctuations; these were not always explicable, but were probably linked with the effect of myxomatosis on the staple food supply and with high populations of small mammals, the secondary food.

Myxomatosis first appeared in the local Rabbits (*Oryctolagus cuniculus*) in August 1954 and had decimated them by the end of that year, but this had no immediate effect on the Buzzards. Throughout 1955 Rabbits were almost totally absent, and although Buzzard numbers were low the usual autumn increase occurred. Rabbits were recovering in 1956 and there were some pockets where they were numerous. In spite of this, Buzzard numbers were very low throughout the year and there was no autumn increase—almost certainly a result of the extremely poor breeding seasons which followed the spread of myxomatosis (Moore 1957). This very low trend continued into July 1957, but was then followed by an increase in the autumn,

presumably due to an influx of young birds after a reasonably successful breeding season. This area was undoubtedly a very attractive one for Buzzards and Kestrels (*q.v.*) during this autumn, owing to the very high populations of small mammals. From 1956 there were always pockets of Rabbits building up to fairly high densities somewhere on the estate, and there was no repetition of the overall massive reduction in numbers caused by the first epidemic of myxomatosis.

In 1958 Buzzard numbers were unaccountably low and there was no autumn increase. This decrease continued into July 1959 to a level as low as any encountered so far, but was immediately followed by an increase in August/October far in excess of any previous numbers. These birds coincided with a localised outbreak of myxomatosis in a large Rabbit population. As gorged Buzzards were many times disturbed from Rabbits at this time, it can be assumed that they were providing an attractive focal point for the birds of a wide area. There were times when up to 8 or 9 Buzzards were seen in the air at once.

I had the impression that after the advent of myxomatosis Buzzards were seen soaring far less often. Although there are no figures to demonstrate this, it may be connected with a change in diet; it seems possible that they are compelled to spend longer in searching for smaller items of food and so have less time for "leisure".

As the area under survey was within a broad tract of country where game preservation was practised, Buzzards were frequently looked upon with suspicion—to put it mildly. In fact, however, throughout the period there were only three or four proven cases of a Buzzard killing a Pheasant or Partridge and in each instance the game-bird had been caught against a wire-netting fence. The fact that there were at least three records of Buzzards attacking decoy pigeons suggests that they are capable of attacking game in the open, but their attempts are probably too clumsy to meet with much success.

Another point of doubtful significance may be worth mentioning if peak autumn numbers of Buzzards can be used as a measure of breeding success. Peaks occurred in 1957 and 1959, which were also the best game years in the period under review. Large populations of Rabbits and/or other small mammals attract large numbers of Buzzards and must act as a buffer against predation on game birds—not only with Buzzards, but also with Cats (*Felis catus*), Foxes (*Vulpes vulpes*), Stoats (*Mustela erminea*) and Weasels (*M. nivalis*) which are the four most serious game predators.

SPARROWHAWK

The figures for the Sparrowhawk show clear-cut trends. In Fig. 1 it can be seen that there is a slow decline during the winter, followed by a low summer population. The immigration of juveniles that have

become independent of their parents forms the major increase in the counts in August. The fall is considerable in September, and thereafter the trend is mainly gradually downwards. Winter numbers are increased on a small scale by immigrants from the Continent, and proof of this was found in 1952 with the recovery in this area of a Sparrowhawk that had been ringed as a nestling in Norway earlier in the same year (Leach 1956).

The Sparrowhawk has always been the principal bird of prey affecting the game preserver and at the present time is the only species unprotected by law. Its numbers must be largely controlled by the effects of game preservation. During the war years persecution was greatly reduced and the population rose to an unusually high level. In 1952 numbers were still high (Fig. 2), but were reduced by more than half by the following year. Thereafter the trend was generally and gradually downwards.

Ringling results have shown (Thompson 1958) that British-bred Sparrowhawks are relatively sedentary and that movement is mostly confined to local juvenile dispersal. It is thus possible for a population to be controlled and considerably reduced. This has no doubt occurred in the present area where the total killed each year is now well below that obtained soon after the war (Table II).

TABLE II—ANNUAL TOTALS OF SPARROWHAWKS (*Accipiter nisus*) KILLED IN THE OBSERVATION AREA, HAMPSHIRE, 1949-1959

1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
45+	48	51	64	58	14	15	7	12	12	18

In 1952, 12 Sparrowhawks were seen per 100 hours, but an average of the four years 1956-1959 shows that by then only 2.6 were seen per 100 hours. Over the whole period a Sparrowhawk was seen on average once every 24.5 hours (i.e. Kestrels were five times more numerous, and Buzzards nearly three times more numerous).

This reduction in numbers is confirmed by the records of Portland Bird Observatory on the Dorset coast. Except for the very occasional bird, records of this species are confined to September and October and most are presumably migrants. They certainly do not breed on the Island. In the period 1952-1955 28 Sparrowhawks were seen in a total of 170 days of observation in September and October (one hawk per 6.1 days); whereas in 1956-1959 only 13 were seen on 235 days of observation (one hawk per 18.1 days).

Sparrowhawks are, of course, probably much more numerous than the numbers recorded would suggest. Their habit of hunting low and flying close to the cover of hedgerows means they are not so

readily seen. To illustrate this point, it is known that on one small area of 200 acres on the estate, where a concentrated study of Partridges was taking place, the gamekeeper trapped 10 Sparrowhawks during 4th March-29th April 1953; but in this same period, in 106½ hours of observation, only four were seen. This species is very easily trapped or shot, for it readily returns to kills if disturbed. It quite often feeds on birds and small mammals found dead and there are several instances of two or three Sparrowhawks being trapped at the same kill. Female Sparrowhawks are quite capable of killing adult Partridges, usually by pursuing them in low flight as they head for cover. Partridges seem to be most vulnerable in February and March, when newly paired; there is then very little crop cover to hide them and many young pairs are in strange surroundings. This sort of predation causes reduction of the Partridge breeding population and so is more important than late summer and winter losses.

An attempt has been made to establish the sex of all Sparrowhawks seen in the field, but when these figures are compared with those obtained from an examination of shot or trapped birds (Table III) there is found to be quite a wide discrepancy.

TABLE III—SEX RATIOS OF SPARROWHAWKS (*Accipiter nisus*) SEEN AND HANDLED IN THE OBSERVATION AREA, HAMPSHIRE, 1952-1959

	♂♂ seen	♀♀ seen	Ratios	♂♂ handled	♀♀ handled	Ratios
January-March	6	42	1:7.0	6	13	1:2.2
April-June	9	15	1:1.7	5	7	1:1.4
July-September	17	56	1:3.3	7	9	1:1.3
October-December ..	15	45	1:3.0	3	14	1:4.7
Totals	47	158	1:3.4	21	43	1:2.0

This may indicate that male birds are seen less readily than females, or that the basis of size in the field is not always a good guide to the sex of the bird concerned. However, wing-lengths were taken of a number of the birds handled, which showed that the sample contained several females with measurements well below those given in *The Handbook* (♂♂ 190-205 mm., ♀♀ 230-240 mm.). One imagines therefore that the tendency would be to identify these small birds as males and thus increase the ratio in favour of females in the case of birds seen in the field. As a matter of interest these wing-lengths (in mm.) may be worth recording here (an "adult" is any bird older than first-winter):

Females: (*adult*) 221, 222, 223, 226, 227, 229, 231, 231, 233; (*1st winter*) 217, 222, 224, 228, 228, 229, 229, 229, 229, 230, 230, 230, 231, 232, 233, 236, 236, 236, 236, 237, 239, 239, 241, 242.

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Males: (*adult*) 188, 190, 190, 196, 196, 200; (*1st winter*) 192, 194, 195, 195, 197, 199, 200, 200, 204, 204, 204.

Both sets of ratios in Table III show a higher proportion of males in the summer months. They are then more active when the females are incubating and brooding.

GOSHAWK

An adult female Goshawk was seen on 8th September 1953. A bird observed on 11th June 1959 was probably also one.

MARSH HARRIER

There is only one definite record of a Marsh Harrier—a male flying north on 3rd April 1958. However, two other hawks not positively identified, on 28th December 1955 and 6th November 1956, were most probably this species.

HEN HARRIER

Rather surprisingly, Hen Harriers proved to be the raptor fourth most often seen—one for every 68.9 hours of observation. I was most impressed by their frequency in the early years of counting. These birds were then seen daily by gamekeepers from mid-October to mid-April over this area of cultivated downland and the wintering population must have been fairly high. Now, however, they are rare.

Fig. 1 indicates a gradual increase in numbers from October (earliest on 17th) to December, a fairly steady wintering population from then until February and a major increase in March, this presumably due to passage birds. Numbers fall off rapidly in April (last on 17th).

Peak numbers were reached in 1955 (Fig. 2), and the annual totals up to that time were consistently higher than in the years that followed (1956-1959). The reduction can be appreciated best if the two periods 1951-1954 and 1956-1959 are compared. In the first four years a Hen Harrier was seen for every 28.61 hours of observation, whereas in the latter period it was down to one every 74.03 hours. The recoveries of ringed birds bred in Scotland do not suggest any distant southerly movement, which intimates that these Hampshire birds are probably of Continental origin.

Recognisable males are considered to be rather unusual amongst wintering Hen Harriers in the south of England, so it is of interest to note how high the ratio here was in favour of males (31 males: 42 "ringtails"). One of my earliest introductions to this species in this area was when two males and a "ringtail" could be seen at the same time hunting over a wide area of farmland.

In this type of country, Skylarks probably form their principal prey, although Partridges are taken whenever the opportunity arises. No

other bird of prey causes greater alarm to Partridges and it is an impressive sight to see every covey on a favourite feeding ground hurtle for the nearest shelter on the approach of a harrier; once part of a covey sought haven beneath my car.

In March 1956 one "ringtail" was believed to have been responsible for the deaths of 3 Partridges and 1 Red-legged Partridge (*Alectoris rufa*) in one week in its favourite feeding area, and on 26th March it was seen feeding on another fresh Partridge kill. On 5th December 1952 a "ringtail" attacked a group of 3 hen Pheasants, but they managed to dodge aside each time it stooped. This harrier then turned its attention to a cock Pheasant which retaliated by flying up and striking out with its feet each time it was attacked. Other food noted included Leverets (*Lepus europaeus*) and dead birds (Wood-pigeon, Pheasant).

MONTAGU'S HARRIER

Records of Montagu's Harrier are confined to the months from May (2nd) to August (19th). The first occurred 15 days after the latest date for a Hen Harrier and the last was seen two months before the first autumn date for that species (17th October) (see Fig. 1). In 1958 a pair attempted to breed, but the eggs were sucked by Carrion Crows (*Corvus corone*) and soon afterwards the female disappeared. This hen was attended by two cocks and the frequency with which they were seen largely accounts for the increase shown in Fig. 2. However, this species was more numerous in west Hampshire and east Dorset generally in that year and at least 7 pairs were located within a 20-minute car journey of my home. They nested in young plantations, cereal crops and reed-beds, and on heathland, so that a wide choice of breeding habitat is available to them. In 1959 Montagu's Harriers prospected the same part of the counting area, but did not nest. Outside these years, records are confined to casual visitations.

Although their food is very varied, items in this area include egg and adult of Nightjar (*Caprimulgus europaeus*), young Rabbits, Meadow Pipits (*Anthus pratensis*), Skylarks, lizards, etc. There is only one record involving a game-bird: on 5th August 1953 a female was found eating a four-weeks old Partridge chick.

HOBBY

The Hobby is a summer visitor, confined to the months from May (9th) to September (18th) (Fig. 1), with the largest number at the end of this period, when wandering juveniles are probably mainly involved. Considering that the present observation area adjoins the main breeding area of the Hobby in Britain, it is surprising how infrequently it is seen. During most of the breeding season it is a secretive and elusive species, and the area is not an attractive one for its feeding purposes.

The Hobbies prefer the heaths near-by for larger moths, and the river valleys for insects and Hirundines, and it is in these places that they may be seen much more often.

Fig. 2 again suggests a downward trend with minor fluctuations. Comparing the years 1952-1955 and 1956-1959, we find that in the former period one Hobby was seen in every 131.01 hours of observation, but that in the latter the species was less than a third as frequent (one in 423.03 hours). It is difficult to account for this reduction, for the Hobby is in no way harmful to game and, except for the occasional very rare accident, is not persecuted by the man with the gun. Egg-collectors are known still to be very active in this area, however, and the Hobby is a "popular" species with them, so it is conceivable that repeated nest losses may account for this fall in numbers. Another possibility is that the recent series of bad summers may have affected the availability of their food and so reduced brood success. Comparable factors may be responsible for similar reductions in other species, including Red-backed Shrikes (*Lanius cristatus collurio*) and Wrynecks (*Jynx torquilla*).

PEREGRINE

The Peregrine was seen in every month except August; most often in February, March and October (Fig. 1). It was the eighth most numerous species and on average one was seen for every 209.48 hours of observation. The higher numbers in spring and autumn may refer to passage birds, but winter visitors occur occasionally. Summer records presumably refer to non-breeding birds; the nearest breeding birds are 30 miles away on coastal cliffs.

Fig. 2 shows there have been fewer Peregrines in recent years, and this is best demonstrated when the two periods 1952-1955 and 1956-1959 are compared. In the earlier period one Peregrine was seen in every 138.29 hours of observation; more latterly the figure has been one in 363.60 hours of observation.

This species is probably often overlooked, due to its habit of "waiting-on" at a great height. Several have been spotted by searching the sky after Partridges have indicated the presence of a hawk, or when Lapwings or Starlings have flocked in alarm. However, there have been a great many more occasions on which these phenomena have been observed and no falcon found.

No bird of prey engenders more alarm in the gamekeeper than the Peregrine. Although Woodpigeons are probably the main prey species in this type of habitat, Partridges taken on or close to the ground obviously form an important part of their diet. A quite surprising number of kills can be found in a fairly restricted area where a semi-resident Peregrine is working. Actual kills are not often seen, so that it may be of interest to describe how a male Peregrine struck one

of a pair of Partridges on 18th March 1953. Probably the falcon had seen the Partridges earlier from high above, for it came in low in a long glide at no great speed and killed by alighting on its victim's back. The only time a Pheasant was involved was on 19th March 1956 when a female Peregrine was disturbed from a freshly killed hen.

MERLIN

The Merlin was the fifth most numerous species, one being seen for every 100.5 hours of observation. None was seen from May to September in any year (Fig. 1). The first birds arrive in October followed by a two-fold increase in November, then wintering numbers are rather lower until spring passage begins in February. This reaches a peak in March, with only a trickle in April. As in the case of the Sparrowhawk, numbers seemed steadily to decline (Fig. 2) throughout the seasons in which complete counts were made. In 1953 an average of 3.04 Merlins was seen for every 100 hours of observation; this figure was down to 0.87, 0.83 and 0.90 in the three years 1957-1959, all on the basis of counts in October-April inclusive.

Records from Portland Bird Observatory support this impression of a reduction in Merlin numbers. There the main passage is from the last week of September to the first week of November, with only very few outside this period. When the figures for 1952-1955 (108 Merlins on 182 days of observation, average one per 1.7 days) are compared with those for 1956-1959 (63 on 308 days, average one per 4.9 days), it is seen that only about one third of the previous numbers have been recorded in later years. As, however, meteorological conditions are a factor to be taken into consideration when dealing with the migrations of this species, too much importance should not be attached to these comparisons.

On the basis of size, an attempt to sex the individuals concerned gave 17 ♂♂ and 21 ♀♀; the remainder could not be determined.

Their food appears to consist entirely of small birds taken in flight, and I have never seen one attempt to kill anything on the ground. Their usual method of hunting Skylarks is to fly low across a field where these birds are feeding, making a series of low stoops when the squatting birds are found. When it has flushed them the falcon then attempts to make a catch. Merlins frequently indulge in "playful" moods and carry out vigorous mock-attacks on other, usually larger, species. They will do this to a covey of Partridges on the ground and on one occasion, on 26th March 1954, after an unsuccessful attack at a flock of Chaffinches (*Fringilla coelebs*), a Merlin repeatedly stooped on a pair in the middle of a large field. Each time the falcon swept over their heads the Partridges "squawked" in alarm, but they did not fly off until the attack was over.

KESTREL

The Kestrel was the commonest species (one per 4.88 hours of observation) and slightly more numerous than all the others combined (one per 5.14 hours). Fig. 1 illustrates the beginning of the rise in the level of the winter population in February, as the return spring passage begins. Numbers reach a peak for the year in March, to fall rapidly in April, and even lower in May when the small local breeding population is established. They increase rapidly again in June and July as broods of young are fledged and wandering juveniles begin to appear. They then fall slightly in August, when autumn migration begins, and reach a secondary peak in September. Thereafter we might expect the figures to decline rapidly to a steady winter level, but in fact the histogram shows there is another secondary peak in November. When the annual totals for the eight years are compared, it is found that there were significant reductions in four Octobers (1952, 1953, 1957, 1958), and significant increases in five Novembers (1952-1954, 1957, 1958). Thus, in four years a reduction in October was followed by an increase in November (1952, 1953, 1957 and 1958). Probably local fluctuations in small mammal populations were responsible for these changes, but no figures are available, except that it is known that their numbers were extremely high in the autumn of 1957. In that year Kestrel numbers were well down by the end of December, but in the following March large numbers again occurred, presumably on return passage. It is reasonable to presume that high populations of small mammals cause local concentrations of their predators (see under BUZZARD for this period).

If the figures are viewed on an annual basis (Fig. 2), it will be seen that there is no obvious trend. There was a gradual increase to 1954, followed by a decrease to 1956, then a threefold increase in the following year. This peak was followed by rather smaller numbers in 1958 and an extreme low in 1959. But these figures bear little relationship to those of the breeding season (Table IV).

TABLE IV—YEARLY NUMBERS OF KESTRELS (*Falco tinnunculus*)
PER 100 HOURS DURING APRIL-JUNE, 1953-1959

1953	1954	1955	1956	1957	1958	1959
47	76	50	15	19	59	16

These summer figures indicate three good years in 1953-1955, followed by a drop to populations of only about one-third in 1956, 1957 and 1959. 1958 proved the exception, but numbers then were high following the very large influx of the previous autumn. It would be interesting to know if these figures are indicative of a general downward trend.

Kestrels undoubtedly take some game-birds as food, although I have only two records of their killing wild Partridge chicks up to 3 weeks. The first time was on 27th June 1957 when a first-summer female was shot as it carried off a 3-week-old chick from a covey. The second was only four days later, on 1st July 1957. I was watching a pair of Partridges with eight fortnight-old chicks in a grass field, when a female Kestrel suddenly carried one off. The cock Partridge immediately flew up and struck the Kestrel from below. This knocked it off balance, but it managed to fly off successfully with the struggling chick.

Kestrels have been seen on a great many occasions hunting over areas where broods of Partridges have been feeding, without either species appearing to pay much attention to the other. On 30th June 1956 a Kestrel was watched hovering low over a pair of Red-legged Partridges that had a brood of young 2-3 weeks old. Each time the hawk stooped the adult partridges flew up and drove it off, until finally it abandoned the attempt. This suggests that game-birds are able to some extent to protect their broods from Kestrel predation. Under the open-field method of hand-rearing Pheasants, however, where the foster-mother hens are normally cooped, Kestrels can be extremely troublesome. Kestrels are quite capable of taking a bird up to the size of a Starling at least, right out in the open, and smaller birds are often killed. They frequently eat carrion and dead birds.

CONCLUSION

Of the ten species of birds of prey reported from this estate, the Kestrel has shown marked fluctuations in numbers, but there is no obvious trend. The Buzzard, too, has fluctuated, probably largely in relation to its food supply. The Sparrowhawk and Merlin have decreased greatly, probably chiefly due to game-preservation in the case of the former, but for unknown reasons in the case of the Merlin. The reduction in this particular population of Hen Harriers may be due to persecution by man in its winter quarters. The Peregrine has decreased, but it is unlikely that man has much effect upon this species away from its breeding quarters. The decrease of the Hobby is also difficult to account for, although the effects of egg-collecting may be partly responsible. The Montagu's Harrier is the only species which has increased noticeably, and in spite of persecution. This may be due to spread from breeding areas where it is relatively unmolested. The other two species, Marsh Harrier and Goshawk, were only vagrants. Altogether, one hawk was seen for an average of 2.51 hours of observation throughout the period.

It is not the object of this paper to discuss the pros and cons of these birds to man. However, as the counts were carried out in a game

preserve, a few words should be added from this point of view concerning their depredations in this particular area. The Kestrel is of no great importance, except on the open rearing field. Male Sparrowhawks will take game chicks, and females adult and young Partridges at all times of year; losses to this species could be important. The disturbance caused by Buzzards is considered to be exaggerated, and direct predation is insignificant. The Merlin and Hobby are both harmless to game. The Hen Harrier undoubtedly takes adult Pheasants and Partridges, but as this is mostly confined to the winter months it is of little importance. There is little evidence of predation on game by the Montagu's Harrier and it seems to prefer other species; but disturbance by it, especially of young broods, may be of some importance though this has not been observed. Game losses to the Peregrine are negligible on this estate, but in some areas this could be a significant species. Indeed, in other districts several of the above species may be more harmful. In particular, Buzzards appear to kill game-birds more often further west where they are more numerous.

ACKNOWLEDGEMENTS

I am very grateful to T. H. Blank who has made a number of counts for me in March and August in some years during my absence and has read the draft of this paper; to the Committee of the Portland Bird Observatory for the use of their records; and to I. J. Ferguson-Lees for his helpful suggestions in the presentation of this paper.

SUMMARY

(1) Over 2,000 birds of prey were counted in a total of over 5,000 hours' observation in the period 1952-1959 on a 4,000-acre game-preserve in Hampshire.

(2) The following species were recorded (in order of numerical superiority): Kestrel (*Falco tinnunculus*), Buzzard (*Buteo buteo*), Sparrowhawk (*Accipiter nisus*), Hen Harrier (*Circus cyaneus*), Merlin (*F. columbarius*), Montagu's Harrier (*C. pygargus*), Hobby (*F. subbuteo*), Peregrine (*F. peregrinus*), Marsh Harrier (*C. aeruginosus*) and Goshawk (*A. gentilis*).

(3) Sparrowhawks, Merlins, Hen Harriers, Peregrines and Hobbies decreased; Buzzards and Kestrels fluctuated in numbers; Montagu's Harriers increased. Marsh Harrier and Goshawk were vagrants.

(4) There are comments on habits, food, effect on game-birds and possible causes of change in status.

(5) An average of one hawk was seen for every 2½ hours of observation.

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PLATE 37. Great Tit (*Parus major*) threatening Long-tailed Field Mouse (*Apodemus sylvaticus*) as it feeds; in this and the next three photographs note the mouse's apparent lack of concern at the presence of the birds (page 302) (photo: M. S. Wood)



PLATE 38. Above, Chaffinch (*Fringilla coelebs*) and, below, Robin (*Erithacus rubecula*) disputing for food with Long-tailed Field Mouse (*Apodemus sylvaticus*)
(photos: M. S. Wood)





PLATE 39. Above, Blue Tit (*Parus caeruleus*) and Long-tailed Field Mouse (*Apodemus sylvaticus*); below, Blue Tit and Chaffinch (*Fringilla coelebs*) fighting (page 302) (photos: M. S. Wood)





PLATE 40. Above, Chaffinch (*Fringilla coelebs*) posturing at Great Tit (*Parus major*) and, below, Dunnock (*Prinella modularis*) threatening Blue Tit (*P. caeruleus*)
(photos: M. S. Wood)





PLATE 41. Robin (*Erithacus rubecula*) dropping down at Chaffinch (*Fringilla coelebs*) as it approaches the food-post; in all these photographs food had been placed in special hollows in the branches or posts (page 301) (photo: M. S. Wood)



PLATE 42. House Sparrow (*Passer domesticus*) landing momentarily on Blackbird (*Turdus merula*) at the food-post; the point of attack is, as usual, the head and the Blackbird has drawn the nictitating membrane across its eye to protect it (page 303)
(photo: M. S. Wood)



PLATE 43. Above, Great Spotted Woodpecker (*Dendrocopos major*) threatening Jay (*Garrulus glandarius*)—note the raised crest and extended wings (page 302)—and, below, Song Thrush (*Turdus philomelos*) in forward threat at Starling (*Sturnus vulgaris*) (photos: M. S. Wood)





PLATE 44. Cock Chaffinches (*Uringilla coelebs*) fighting at the food-post; this is the usual vertical flight attack, the two birds rising and falling together, clawing and pecking at one another (photo: Al. S. Wood)

M. S. Wood's garden and bird-table photography

By Stuart Smith

(Plates 37-44)

THE LATE DR. MARTIN WOOD, who took the remarkable photographs of birds in aggressive attitudes shown in this issue, had been recognised as a first-class bird photographer of the conventional type for many years before circumstances forced him to less conventional methods. His family was well known in Lancashire cotton circles and there was a flourishing business career awaiting him, but he would have none of it. Instead he read medicine and became a specialist in psychiatry at a large mental hospital in Cheshire, where in pleasant surroundings he could indulge his twin passions of cricket and the study of natural history.

The death of his father left him with enough money to retire at a relatively early age, and he bought a house at Orrest Foot, overlooking Windermere. The garden was quickly converted into a sanctuary for wild life and he spared no pains to make it attractive to birds and beasts. He disliked the usual type of bird table, and hollowed out logs and tree-trunks which he supported horizontally a few feet from the ground and stocked with food.

Two circumstances then led him to use his garden sanctuary more and more for his photographic studies. The first was that he became partially crippled by arthritis, which greatly limited his ability to get about the countryside, and the second was the marketing of an electronic flash apparatus which he immediately bought. He installed a camera and its attached high-speed flash apparatus permanently just inside the open French windows of his study, and there he would sit for hours content to wait for anything that might come along. In his hollowed logs he used a mixed bait of nuts, bread and meat offal, and thus attracted small mammals as well as various birds. The photographs that accompany this text are just a few of those he obtained by this method. They are of special interest because they were taken under perfectly natural conditions and did not involve the use of dummies or stuffed specimens, such as were employed by George Edwards, Eric Hosking and myself in our studies of the aggressive displays of certain birds (*Brit. Birds*, 42: 13-19; 43: 144-150). There can thus be no question of secondary reactions having occurred here—such as the displacement postures which we saw and recognised

when our dummies failed to respond to the displays and attacks of the birds.

The first four photographs (plates 37, 38 and 39a) are of a Great Tit (*Parus major*), a Chaffinch (*Fringilla coelebs*), a Robin (*Erithacus rubecula*) and a Blue Tit (*Parus caeruleus*) disputing over food with a Long-tailed Field Mouse (*Apodemus sylvaticus*). They are of considerable significance because they show how remarkably little reaction there was from the mouse to the flight-attacks of the birds. The mouse is holding food in its fore-paws and is apparently unconcerned by the presence of its aggressors: in this its behaviour is quite different from the attitudes of birds to the presence of rivals at food sources. The fact of the appearance of the mouse at the bait during the day-time also calls for comment, as this species is normally nocturnal and seldom seen by day unless ill or started from its burrow by some predator. Lack of disturbance and a constant food supply have, however, overcome its fear of the light and thus it has come, somewhat artificially perhaps, to be a competitor with the birds for the food. The known ability of the Long-tailed Field Mouse to climb to considerable heights accounts for its presence on a vertical post. It is unfortunate that we have no record of the final outcome of the threats and attacks of the birds against the mouse, but judging from the photographs it seems unlikely that they were very effective in moving it.

Inter-specific competition and the corresponding threat, and in some instances fighting, attitudes are illustrated in most of the rest of the photographs. The next two show once again a Blue Tit and a Great Tit in action, but this time against a Chaffinch. Chaffinches are aggressive birds and tough fighters as Hosking and I found when experimenting with a stuffed Cuckoo (*Cuculus canorus*), but so are Blue Tits and in plate 39b the tit is shooting out a foot with claws extended to ward off the Chaffinch. In plate 40a a Great Tit has just landed on a post already occupied by a Chaffinch, and the latter counters with a forward threat posture. Plate 41 shows a Robin in a remarkable attitude in mid-air, likewise demonstrating against a Chaffinch. Chaffinches also fight vigorously amongst themselves and plate 44 illustrates the usual vertical flight attack—in which two birds rise and fall together in the air, clawing and pecking.

Unusual pairings, as far as competition is concerned, are shown in plates 40b and 43a with Dunnock (*Prunella modularis*) and Blue Tit, and Jay (*Garrulus glandarius*) and Great Spotted Woodpecker (*Dendrocopos major*). Dunnocks are thought by many to be unobtrusive, timid birds, but they can be very aggressive during the breeding season, as I know from personal observation, and this one is evidently not yielding to the Blue Tit. The posture of the Great Spotted Woodpecker against the Jay is typical of that shown by this species in sexual and

aggressive displays. The wings are widely extended and quiver, the crown feathers are raised and the tail is spread, full use thus being made of feather patterning and coloration.

More usual, from a competitive point of view, are the encounters between Starling (*Sturnus vulgaris*) and Song Thrush (*Turdus philomelos*) (plate 43b) and between Blackbird (*T. merula*) and House Sparrow (*Passer domesticus*) (plate 42). The forward posture with widely gaping beak used by the Song Thrush is typical of this form of threat display in the genus *Turdus* and should be compared with Hosking's photograph of a Mistle Thrush (*T. viscivorus*) in threat attitude (*Brit. Birds*, 43: plate 14, figs. 9 and 10). The attack by the House Sparrow on the Blackbird shows features that are common to many such cases where the aggressor alights momentarily on the other. The point of attack is usually the head and nape, as we frequently observed when using stuffed birds. It should be noted that the Blackbird has immediately drawn the nictitating membrane across its eye to protect it, and it is probable that the other eye is similarly covered.

These photographs are just a few selected from many taken by Martin Wood, to show the kind of result that can be obtained in a garden, if long preparation and great patience are used.

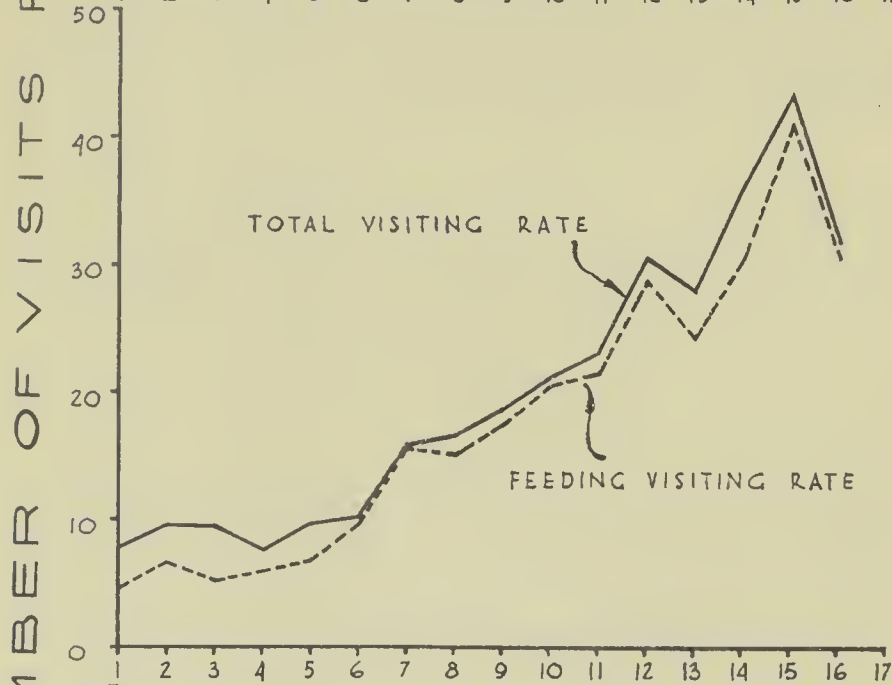
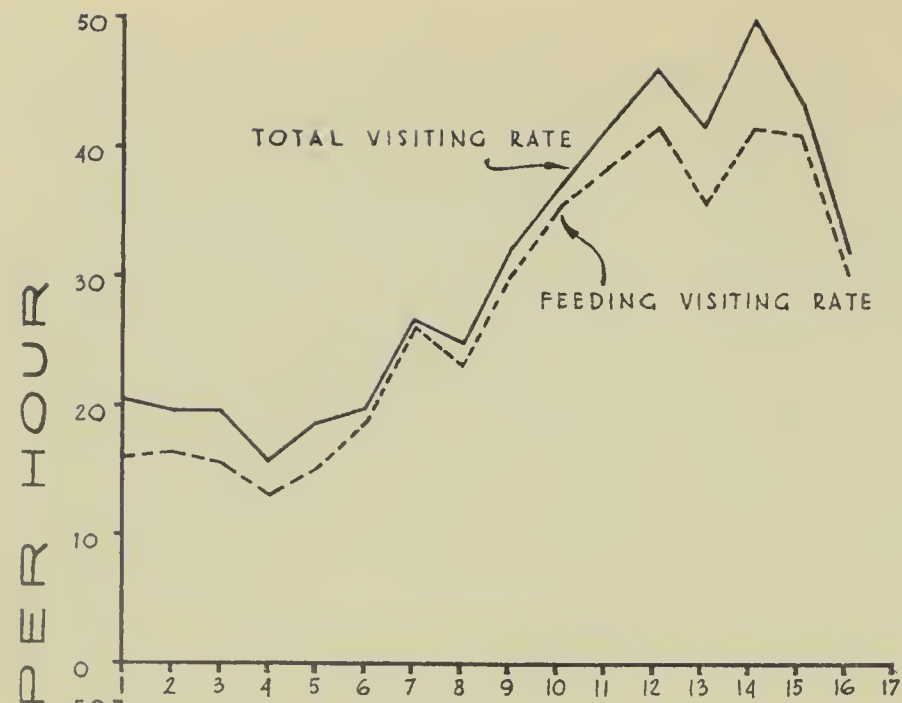
The behaviour of a pair of House Sparrows while rearing young

By David C. Seel

INTRODUCTION

IN 1959 OBSERVATIONS were made on the behaviour of a pair of House Sparrows (*Passer domesticus*) rearing their second brood of young in an observation nest-box in the suburban district of Pinner, Middlesex. Fixed near the eaves of a house and eighteen feet above the ground, the box was outside the top of an open window. Watch was kept at a distance of eighteen inches from the interior of the room which was darkened.

Three of the four eggs in the nest (No. 132 in the observer's records) hatched on 29th June before 1030 hours GMT, and the fourth on the 30th before 0600 hours. One young was missing before 0558 hours on 2nd July. The other three young were in the nest for the whole of the nestling period. The first of these three left on 14th July at 0929 hours, and the second the same day between 1545 and 1625 hours. The third left on 15th July before 0545 hours.



During the nestling period a six-hour observation watch was maintained daily, on the first day from 1200 to 1800 hours GMT and thereafter usually from 0600 to 1200 hours. Additional watches were kept to obtain an indication of awakening and roosting times. Except for these awakening and roosting times, however, the results presented for this nest are drawn solely from the six-hour periods. For comparison, some results from another nest (No. 82) are included.

Evidence strongly suggested that the female of the pair was drowned in a water-butt during the afternoon of the fourteenth day and that the subsequent behaviour of the male was abnormal (abnormal for a pair, but perhaps normal for a male whose mate has died).

THE SHARES OF THE SEXES IN FEEDING THE YOUNG

At most times it was difficult to identify the food brought by the adults to the young and nearly always impossible to assess the quantity. Observations suggested, however, that both adults brought about the same quantity and that the amounts were small during the early days, larger in the middle part of the period and small again on the last two days.

Owing to these difficulties, the assessment of the shares of the sexes in feeding the young has been based upon the number of feeding visits made by each. During the first six days the proportion of feeding visits by the male averaged 41%, during the seventh to fourteenth days inclusive 64%, and on the last two days 100%.

THE RATE OF FEEDING THE YOUNG

Feeding rates were thus assessed from the numbers of feeding visits made by the adults. These results are presented in Fig. 1. The fall in the combined feeding rate of male and female on the fourth day may have been related to the reduction in the number of young from four to three. Thereafter the combined feeding rate generally increased to a maximum on the fourteenth day and then declined, owing in part to the female's complete cessation of feeding. The feeding rate and the length of time the young were brooded were related to the extent that, as the former increased, so the latter declined. On the eighth and thirteenth days, when there were marked increases in the duration of brooding periods compared with those of the previous days (Fig. 3), the feeding rate fell.

FIG. 1. Total and feeding visits per hour by a pair of House Sparrows (*Passer domesticus*) to their second brood, Middlesex, June-July 1959 (Nest 132). A shows the visiting rates of male and female combined, while in B and C respectively they are separated (page 306 and cf. Fig. 2); the female is believed to have been drowned on the fourteenth day

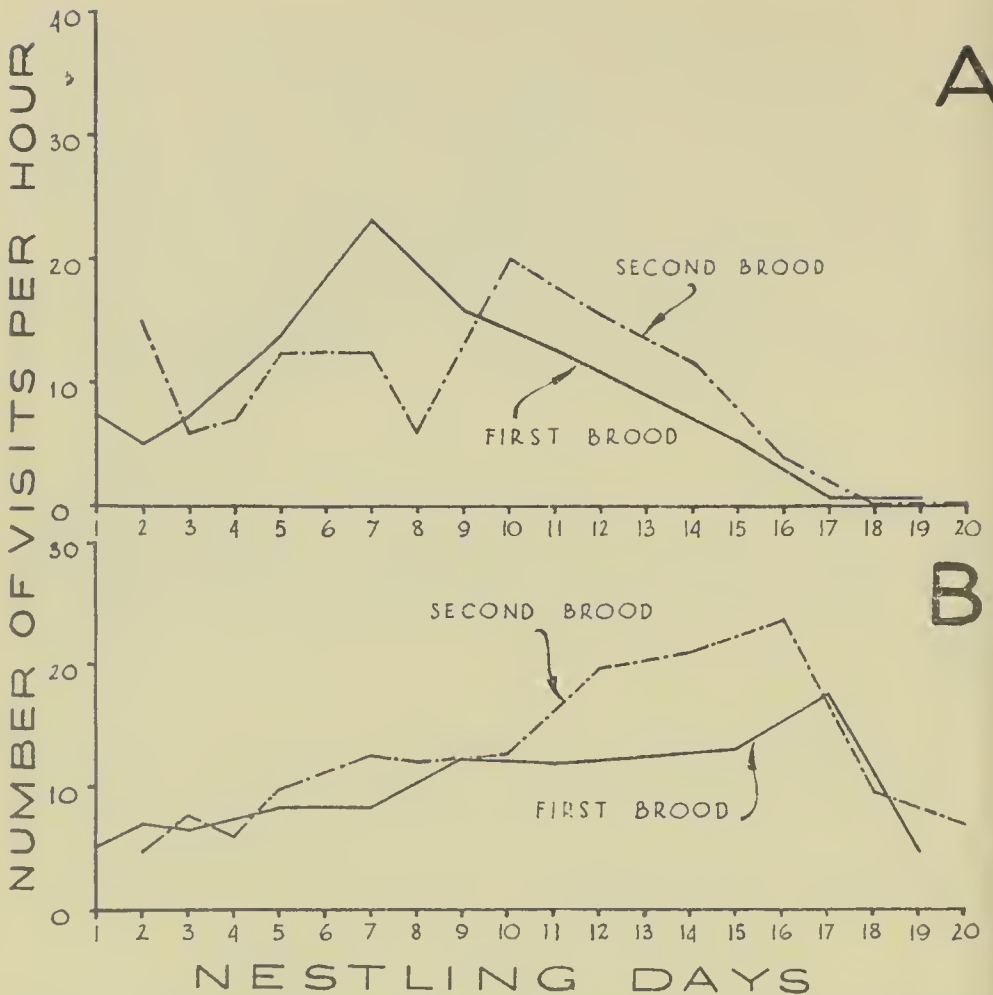


FIG. 2. Numbers of visits per hour by a pair of House Sparrows (*Passer domesticus*) to their first and second broods, Middlesex, May and June-July 1957 (Nest 82). A shows the visiting rates of the male and B those of the female. This nest was watched for only a minimum of two hours in the morning, but the data provide a useful comparison with the total rates in Fig. 1

The individual feeding rates of male and female differed considerably (Figs. 1b and 1c). The pattern of the feeding rate of the male, who took the major part, was similar to the combined feeding rate. The male's maximum occurred on the fifteenth day. On the sixteenth day he averaged 34 feeding visits per hour (during $3\frac{1}{2}$ hours) before the first young left the nest; after which his rate fell to 20 per hour (during $2\frac{1}{2}$ hours)—approximately one-third less.

The feeding rate of the female changed less than that of the male. Her rate was low and about the same for the first eight days. Then there was a rise to a maximum (less than half the maximum of the male) on the eleventh day. A decline followed. The female was not seen to visit the nest after the fourteenth morning.

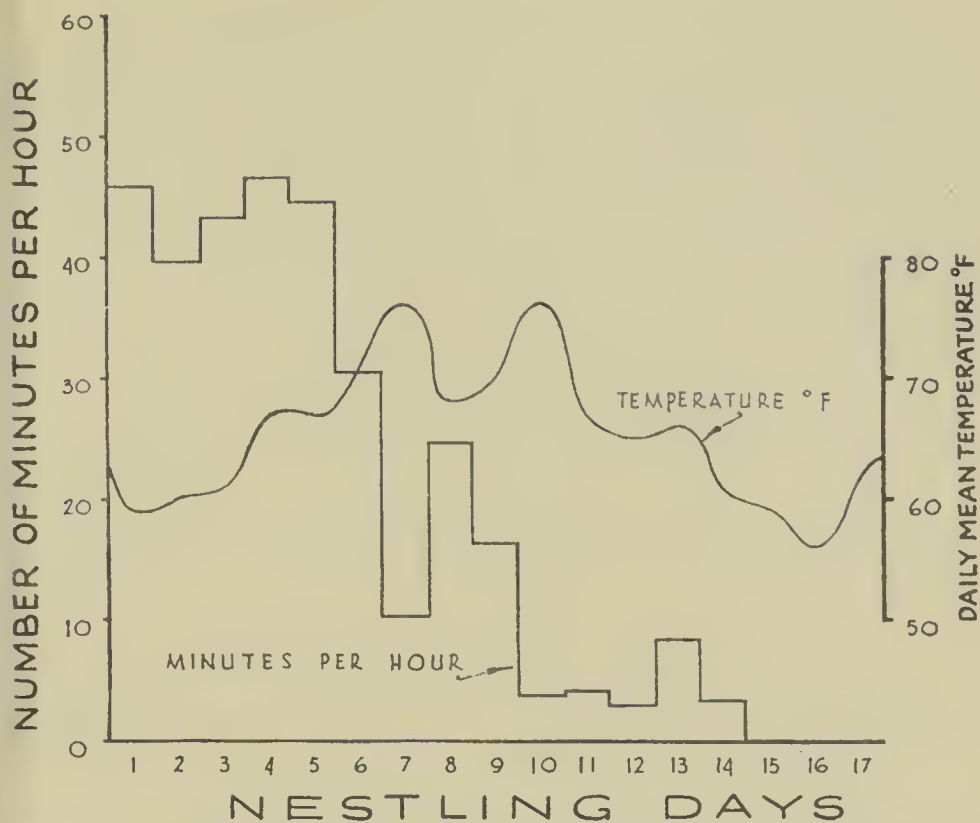


FIG. 3. Numbers of minutes per hour spent by a pair of House Sparrows (*Passer domesticus*) in brooding the young of their second brood, Middlesex, June-July 1959 (Nest 132). (The values shown are slightly too large since they are actually the periods spent at the nest and true brooding was interspersed with other activities.) Note the apparent influence of the temperature in the middle of the nestling period when the brooding urge was waning, and also the relationship between the brooding rates and the feeding rates shown in Fig. 1

The young were not fed at every visit by the adults to the nest, though it can be seen from Fig. 1 that the pattern of the feeding rate closely approximated to that of the total visiting rate. The total visiting rate is given for comparison with the total rates obtained by watching for a minimum of two hours in the morning the first and second broods in the 1957 nest (No. 82) already mentioned (Fig. 2).

BROODING OF THE YOUNG

It was not possible to assess precisely the time the adults spent brooding because the periods, usually short, were irregularly interspersed with other activities, such as probing in the nest. For this reason "brooding" has been shown (Fig. 3) as the lengths of the visits during which actual brooding occurred. Obviously the values obtained by this method are slightly too large, but they show the pattern. Both adults brooded the young, doing so in the first five days for an average

BRITISH BIRDS

TABLE I—TIME SPENT BY A PAIR OF HOUSE SPARROWS (*Passer domesticus*) IN BROODING THE YOUNG, MIDDLESEX, JUNE-JULY 1959

Nestling day	Total hours observation before 0800 GMT	Percentage of this time spent brooding (both sexes)	Total hours observation after 0800 GMT	Percentage of this time spent brooding (both sexes)	Share of brooding during the six hours (percentage)	
					Male	Female
1	—	—	6.0	77	46	54
2	2.0	76	4.0	61	45	55
3	2.0	73	4.0	72	50	50
4	2.0	85	4.0	75	48	52
5	2.0	83	4.0	72	46	54
6	2.0	72	4.0	40	41	59
7	2.0	28	4.0	20	42	58
8	2.0	56	4.0	34	44	56
9	2.0	28	4.0	27	22	78
10	2.0	12	4.0	3	20	80
11	2.0	11	4.0	3	8	92
12	1.0	8	5.0	5	6	94
13	1.4	2	4.6	18	27	73
14	2.0	8	4.0	4	0	100
15	2.0	0	4.0	0	—	—
16	2.0	0	4.0	0	—	—
17	—	—	—	—	—	—

of 44 minutes per hour, from the sixth to the ninth day for an average of 21 minutes and from the tenth to the fourteenth day for an average of 5 minutes. Brooding was negligible on the fifteenth and sixteenth days. Fig. 3 suggests that brooding time in the middle of the nestling period was influenced by the temperature. With the exception of the thirteenth day there was more brooding in the early and cooler part of the morning (before 0800 hours) than later (Table I). The male's share of the brooding during the first eight days averaged 45%, and from the ninth to the fourteenth day 14%. His share decreased sharply between the eighth and ninth day.

NEST-SANITATION

On the first day the adults swallowed the faecal sacs. On the second day they both swallowed and carried them away, in the ratio 1:2. Thereafter, with very few exceptions, faecal sacs were carried away.

The young defecated approximately once every two hours. (This is the average of the six-hour periods for the whole of the nestling period; it appeared to be subject to daily variation.) Before defecating, the young raised their posterior regions away from the centre of the nest.

During the first seven days, they defecated on to the sides of the nest,

and were sometimes seen to do so towards the entrance hole. Throughout the nestling period one corner of the box just inside the hole was particularly used for this purpose. By the seventh day the adults were already sometimes feeding the young without completely entering the box and they began to remove faeces merely by leaning through the entrance. On the eighth day the young, having grown larger, began to defecate on to the entrance hole lip, as well as inside the box, and did so more frequently as time went on. These faeces were also carried away by the adults. On the twelfth day the young began defecating directly out through the entrance hole; and thenceforth defecated both inside and outside the box and at the entrance.

When in the nest both adults frequently probed among and beneath the young, sometimes finding objects which were either swallowed or carried away.

During the first eleven days the male was seen seven times, and the female once, to bring material (feathers, grass, fluff) into the nest.

TABLE II—TIMES OF AWAKENING AND ROOSTING OF A PAIR OF HOUSE SPARROWS (*Passer domesticus*), MIDDLESEX, JUNE-JULY 1959

are given in minutes before (—) or after (+) sunrise and sunset. The dashes mark the nights (8th/9th, 9th/10th and 10th/11th) on which it is known that no bird roosted in the nest. A complete blank indicates that no observations were made.

	Morning departure of bird roosting in nest	First visit of bird not roosting in nest	Evening arrival of bird going to roost in nest	Last visit of bird not roosting in nest
9th				
10th				
11th			—26 (♀)	—29 (♂)
12th	0 (♀)	—2 (♂)	—23 (♀)	—29 (♂)
13th	—18 (♀)	—19 (♂)	+10 (♀)	+16 (♂)
14th			—1 (♀)	—34 (♂)
15th	before —30 (♀)			
16th			—	before —45 (♂)
17th				—36 (♀)
18th	—	—14 (♀)	—	
19th		—4 (♂)		
20th	—	—1 (♀)	—	—36 (♀)
21st		+8 (♂)		—35 (♂)
22nd	—	+16 (♀)		
23rd		+29 (♂)		
24th			—11 (♂)	
25th	—16 (♂)		—13 (♂)	
26th				
27th				

ROOSTING OF THE ADULTS

The female roosted in the nest until at least the seventh night, but not after the ninth night. After her presumed death on the fourteenth afternoon, the male roosted in the nest during the fourteenth and fifteenth nights, but not during the sixteenth. On this last night he apparently went to roost, but was disturbed by a noise made by the observer, left the box and did not return again that evening.

From the data collected on awakening and roosting times (Table II) the following notes were made. When the female roosted in the nest she first left it at or before sunrise, but not before the male arrived. When the female roosted elsewhere, she first visited the nest about ten minutes before the male did. Twice she did so before sunrise, but on the thirteenth day a thunderstorm preceded sunrise and seemingly delayed the arrival of the adults. When the male roosted in the nest, he was once recorded as first leaving it before sunrise.

The female went to roost in the nest between 26 minutes before and 10 minutes after sunset. When roosting elsewhere, she made her last visits at 36 minutes before sunset. The male roosting away from the nest made his last visits at least 16 minutes before sunset. When spending the night in the nest, the male went to roost at 11 and 13 minutes before sunset.

SUMMARY

(1) In feeding the young the share of the male of a pair of House Sparrows (*Passer domesticus*) in Middlesex increased through the nestling period from the minor to the major part.

(2) The combined feeding rate of male and female reached its maximum on the fourteenth day. The pattern of the male's rate alone resembled that of the pair combined. The female's rate changed less markedly, and the maximum reached on the eleventh day was much smaller than the male's. The total visiting rate differed from that recorded at another nest.

(3) Both adults brooded the young to some extent during almost the whole of the nestling period; for the first five days they did so for about three-quarters of the time and subsequently less and less.

(4) All faecal sacs were swallowed by the adults on the first day and thereafter were mostly carried away. The young defecated about once every two hours. The adults removed faeces deposited in the nest-box. In the nest the adults probed in the bottom of the nest. Occasionally the male, and once the female, brought material to the nest.

(5) The female roosted in the nest for about the first half of the nestling period and after her presumed death the male did so at the end of it. In the morning the female first left the nest or first visited it usually before sunrise, while the male did so between 19 minutes before and 29 minutes after sunrise. The male and usually the female made their last visits before sunset.

ACKNOWLEDGEMENTS

The author wishes to thank Graham Phillips for much helpful advice and the Director-General of the Meteorological Office for permission to publish climatological information from the Wealdstone records.

Notes

Olivaceous Warbler in Co. Donegal.—At about 6 p.m. on 29th September 1959 I found a strange warbler among the small walled enclosures of the lighthouse grounds at the western end of Tory Island, Co. Donegal. The light was very poor and fading, so that binoculars were of limited value, but I was able to watch it for some ten minutes at often close range. My initial impression was that it was something like a Northern Willow Warbler (*Phylloscopus trochilus acredula*), though too brown, and indeed whenever it returned to a bush its distinctly *Phylloscopus*-like appearance caused me to think that I was making a stupid mistake. However, its silhouette revealed that it was a very different bird. It had a notably long bill and the high forehead of the *Hippolais*, and its carriage on the ground was rather pipit-like, with fairly long legs and a longish tail for a warbler, carried rather level. Its behaviour was something like that of an Icterine Warbler (*Hippolais icterina*), but without quite that bird's zest and excitability. It darted about a little in the manner of a flycatcher and had an odd habit of perching half way up walls on no very obvious ledge. It seemed to have no objection to the open ground and hopped about freely on the bare forecourt of the lighthouse. It frequently perched on the tops of walls and there it was noticeable that it had a wagtail-like habit of flicking its tail. The wings were not especially long.

As this was clearly a *Hippolais* which was unfamiliar to me—I had previously seen both Icterine Warbler and Melodious Warbler (*H. polyglotta*)—and as the light was fading so much that I was certain not to get any further information on colour, I set a mist-net and caught the bird. I was then able to identify it as an Olivaceous Warbler (*H. pallida*). The following laboratory inspection was carried out under gas and electric light:

Upper-parts uniform dirty olive-brown; flight feathers and tail slightly darker, though the opposite effect was given in the closed wings by lighter edges to the primaries; slight light eye-stripe. Under-parts dirty grey, more olive at the sides of the breast; chin whiter. Legs horn colour with a bluish tinge (but none of the brightness of those of the Icterine). Bill fairly broad and distinctly long, with a heavy ridge effect along the top, the feathers growing down to the nostril on the side but not on the ridge; bill colour dark brown above, pinkish below and very light on the flanges; inside of mouth bright yellow with orange veins. Eye grey-brown with dark pupil. *Measurements*: wing 62 mm., tail 53 mm., tarsus 20 mm., bill 8.25 mm. from nostril and 15 mm. from skull with maximum width 5.5 mm.; two outermost tail-feathers 2 mm. and 6 mm. shorter than longest, and several others only half-grown. *Wing-formula*: 4th primary longest, 3rd and 5th equal and fractionally shorter, 6th — 3.5 mm., 2nd — 5, 7th — 8, 8th — 10, 9th — 12, 1st 4.5 mm. longer than primary coverts. *Weight*: 9.15 gm.

The bird was then ringed and released. This is the first record of this species in Ireland.

R. G. PETTITT

[Only two previous records of the Olivaceous Warbler in the British Isles are now accepted: one at Skokholm, Pembrokeshire, in September and October 1951 (*Brit. Birds*, 46: 191-192) and one at Portland, Dorset, in August 1956. Full details of the latter have not previously appeared in this journal and we take this opportunity of publishing them.—EDS.]

Olivaceous Warbler in Dorset.—An Olivaceous Warbler (*Hippolais pallida*) was caught in a funnel trap at Portland Bird Observatory, Dorset, shortly after noon on 16th August 1956. It was examined in the observatory then by the undersigned and also by Dr. J. S. Ash, E. G. Darton, K. V. Edwards, Dr. K. B. Rooke and G. E. C. Waterhouse. In general appearance it was a slender, medium-sized warbler with a remarkably broad and flattened bill and a tail that was almost square except for shorter outermost feathers; it had pale brown upper-parts with a faint whitish superciliary stripe extending just behind the eye, and dirty white under-parts. Its alarm note was a rather loud sparrow-like “chut” or “chek” repeated two to six times; it reminded W.R.P.B. of a very loud, abrupt Icterine Warbler’s (*H. icterina*) call and he has since heard Olivaceous Warblers utter it in Cyprus, whilst KDS had heard the same note used singly by this species in Eritrea. The following is a summary of the laboratory description:

Upper-parts: crown, mantle and rump greyish-brown with a faint olive tinge; an indistinct pale creamy-buff supercilium (more noticeable at a distance); upper wing-coverts with brown centres and indistinct buff edges; primaries and secondaries with darker centres and distinct pale greyish-buff edges (most marked on inner secondaries); tail brown with narrow pale outer margins to outside feathers and almost square except that outer feathers were 3 mm. shorter. *Under-parts:* throat, sides of breast and flanks dirty whitish tinged yellowish-buff; belly and vent a very pale buffish-white; axillaries and under-wing-coverts brownish-white; no trace of lemon yellow on the under-parts. *Soft parts:* bill dark horn with yellow on lower mandible; prominent orange-yellow gape; two stout rictal bristles; legs variously described as “lead grey”, “bluey-grey” and “slate blue”, appearing darker brownish-slate in poor light; iris dark brown. *Measurements:* wing 64 mm. (straightened), tail 47 mm., tarsus 20.5 mm., exposed culmen 10.25 mm., whole bill to skull 13.5 mm. and 5 mm. wide at the base; weight 11.2 gm. (at 1800 GMT). *Wing-formula:* 3rd and 4th primaries longest, 5th —1 mm., 2nd —5 mm. and falling between 6th and 7th; 1st 4 mm. longer than its coverts; 3rd, 4th and 5th emarginated.

There was a considerable drop in length between the 5th and 7th primaries with a more uniform gradation from the 7th to 10th, so that the wing had a slightly concave trailing edge with the 3rd to 6th primaries extending well beyond the line of the tips of the inner primaries or secondaries. The rounded contour of the tips of the

primary coverts (innermost shorter than next) was noticeable and agreed well with the figure in *The Handbook* (plate 38) and with the photograph of the Skokholm bird of 1951 (*Brit. Birds*, 46: plate 27b).

The bird fed quite readily on mealworms and there seemed no difficulty about keeping it in captivity overnight. It was therefore decided to take it to the British Museum (Natural History) by the first train on the following morning, with the aim of confirming the identification against skins and also, if possible, of determining the race (and thus the area of origin). At the British Museum the bird was seen by a number of people. On plumage it was thought to agree with the western Mediterranean race (*H. p. opaca*), but Mr. Kenneth Williamson (*in litt.*) has since pointed out that the measurements show it to have been of the Balkan race (*H. p. elaeica*) and that it was doubtless in first-winter plumage.

After examination the bird was released in Richmond Park. It flew away vigorously and immediately started to feed in the typical manner of a *Hippolais* in the upper foliage of some birch trees. In the field it seemed very much paler, almost bleached; it looked rather uniform above and showed hardly any yellow below. It was very shy and was soon lost to view. W. R. P. BOURNE and K. D. SMITH

Anting by Meadow Pipits.—In the recent notes on anting (*Brit. Birds*, 53: 11-25), no mention was made of this behaviour in the Meadow Pipit (*Anthus pratensis*). It therefore seems worth placing on record that I saw birds of this species anting at Burnham-on-Sea, Somerset, on several occasions in September and October 1957 and 1959 during their autumn migration. The greatest number I saw at any one time was six. Usually the birds were in the gutters of the South Esplanade where numbers of small, blackish ants live between the curb stones. I made all my observations during my morning walk to the office and the dates were as follows:

1957	September 24th	6 birds	1959	September 25th	3 birds
	October 10th	2 birds		October 2nd	1 bird
	October 22nd	1 bird		October 8th	1 bird
1959	September 23rd	4 birds		October 13th	5 birds
	September 24th	1 bird		October 14th	4 birds

The anting movements of the pipits were extremely rapid as the insects were picked up from the ground and brushed under the wings and, occasionally, under the tail. On each occasion the anting lasted for only a brief time (estimated at under half a minute). The birds then went on foraging for food in a loose flock with other Meadow Pipits which had not been attracted to the ants.

Other species commonly present with the Meadow Pipits were skylark (*Alauda arvensis*), Wheatear (*Oenanthe oenanthe*), Pied/White

Wagtail (*Motacilla alba*), Yellow Wagtail (*M. flava*) and Linnet (*Carduelis cannabina*). None of these was ever seen anting and the only bird which once fed briefly on ants—a swarm of them on the sea-wall—was a male Wheatear on 26th April 1960. In the autumn in this part of Somerset flying ants are hawked by several species of birds, especially Jackdaws (*Corvus monedula*) and also Starlings (*Sturnus vulgaris*), Black-headed Gulls (*Larus ridibundus*), Common Gulls (*L. canus*) and, once, a Kestrel (*Falco tinnunculus*). E. G. HOLT

Anting behaviour by Meadow Pipits.—On 5th October 1953 I spent several minutes watching six Meadow Pipits (*Anthus pratensis*) picking up objects on a bowling-green at Par Beach, Cornwall. Unfortunately, even though I was only a few yards away, I was unable to be sure what it was they were picking up. However, all the birds assumed the typical attitude associated with anting and placed the objects under the wings and under the tail-coverts. C. J. STEVENS

Anting in the Motacillidae.—The records of anting and anting-like behaviour by Meadow Pipits (*Anthus pratensis*), which appear above, are the first for this species. In fact, no other member of the Motacillidae has been seen anting in the wild although Dr. H. Poulsen lists a Tree Pipit (*A. trivialis*) among the 104 captive individuals of 56 Passerine species that anted during his experiments in the Copenhagen Zoo (*Dansk. Orn. Foren. Tidsskr.*, 50: 267-298).

The ants used by the Meadow Pipits watched in Somerset by E. G. Holt were presumably of the species *Lasius niger*. On their breeding grounds, however, these birds would be more likely to encounter the small, yellowish *Lasius flavus* whose mounds are often extremely numerous on down-land and similar habitats as, in my own experience, is the case on the Berkshire Downs where both Meadow and Tree Pipits occur. Although these ants live underground, opportunities for the pipits to ant with them would come whenever the mounds were disturbed by grazing animals or when the reproductive-swarmling occurred in late summer. It would certainly be worth while watching for anting by pipits and other downland Passerines at the often conspicuous mounds of this ant and the situation lends itself to easy experimentation.

It seems appropriate to refer briefly here to an experiment I made on 17th September 1958 at Reading, Berkshire, with *dead* workers of the Wood Ant (*Formica rufa*). This was part of an extensive study of anting problems, of which a full account will appear elsewhere. Several ants were deposited, along with nest debris, on the edge of a large playing-field where twenty-one Yellow Wagtails (*Motacilla flava*) were gathered. The ants were only recently dead and still fresh, and

so retained their characteristic acid taste. Several of the wagtails came and foraged amongst the debris and were seen to eat ants, some individuals consuming several and others soon moving away. They took their time over eating each ant, picking it up, dropping it, picking it up again and banging it against the ground, and so on, before finally swallowing it. The birds frequently shook their heads and wiped their bills, especially after eating an ant, obviously finding it very strong to the taste. A Pied Wagtail (*M. alba*) walked amongst the debris but did not certainly attempt to eat any of the ants. Two or three House Sparrows (*Passer domesticus*) also hopped through without picking up anything. There was no sign at all of anting from any of these birds although some captive Passerines (already experienced anters) have been recorded anting with dead ants.

K. E. L. SIMMONS

Unusual roosting site of Pied Wagtails.—I can give an example of a large roost of Pied Wagtails (*Motacilla alba*) similar to that described by C. D. T. Minton (*Brit. Birds*, 53: 132-133). This one is in green-houses used for growing carnations near Sway, Hampshire. It began about ten years ago when a pair or two nested in the foliage. Over the years numbers of nesting but mainly of roosting birds increased enormously and caused great financial loss through their droppings on the buds and blooms; in fact, the girls who picked the blooms refused to do so because they got in such a filthy mess. The owner sought the advice of the National Agricultural Advisory Service, but that body was unable to make any helpful suggestions. Finally, when one house was to be cleared in readiness for the planting of a new crop, he took the opportunity to get most of the birds into it by closing the ventilators of the other fourteen houses early. The ventilators of this one house were not opened as they normally would be each morning but remained closed, with the birds inside, from 6th to 10th February 1958. The appalling result was that 325 Pied Wagtails were picked up dead on about the 10th and 11th, and by the time the plants had been completely cleared out the owner estimated that the number dead was nearer 600. I gather that counting stopped after the first 325. The story came to light through the owner's sending two rings to the Bird-Ringing Committee with a letter explaining how he came by them. In 1959 he was not troubled at all but now (March-April 1960) numbers are beginning to build up again and, as for technical reasons too long to go into here it seems impossible to exclude the birds, it looks as though the story may be repeated, though probably on a smaller scale.

EDWIN COHEN

Recent reports and news

By I. J. Ferguson-Lees and Kenneth Williamson

The items here are largely unchecked reports, and must not be regarded as authenticated records. They are selected, on the present writers' judgement alone, from sources generally found to be reliable. Observers' names are usually omitted for reasons of space and in case a report is subsequently rejected, and none of the items will be mentioned in our annual Index. Readers are asked to submit anything of interest as quickly as possible.

This summary is largely confined to May and the first two weeks of June. To some extent it overlaps in time with that in the previous issue (pp. 278-280).

PASSAGE OF TERNS—NOTABLY BLACK AND SOME RARER SPECIES

The second and third weeks of May, and to a lesser extent the first, saw an unusually heavy passage of sea-terns (*Sterna* spp.), the now annually expected but nevertheless still very striking movement of Black Terns (*Chlidonias niger*), and the occurrence of several rarer members of this group. The sea-terns were most marked along the south coast of England, making their way eastwards up the Channel, but surprising numbers—tens and twenties or more—were reported at the same time as Black Terns from several reservoirs in the Midlands and the London area. Common or Arctic Terns (*S. hirundo* or *macrura*) were the main birds involved, with good-sized parties of Sandwich (*S. sandwicensis*) on the coast, but Roseate and Little Terns (*S. dougallii* and *albifrons*) also took part and these two species, rare inland, were even recorded at one or two reservoirs.

The main period of the Black Tern movement appears to have extended from 8th to 15th May, with stragglers up to the 21st and even to the beginning of June. Within these limits the dates of the peak varied in different parts of the country. The heaviest up-Channel passage at Dungeness (Kent) was noted on 8th May (55) and 15th May (113), but inland in the south and also in East Anglia the bulk of the movement took place on the 10th and more particularly the 11th and 12th. At Cley (Norfolk), for example, 162 were counted on the 10th, 100 on the 11th and 372 on the 12th. In the Midlands and further north, as is often the case, the peak was a day or two later—on the 12th and 13th, extending to the 14th and 15th. A total of over 100 at Leigh Flash (Lancashire) and parties of 45 and 22 at Rostherne and Tatton Meres (both Cheshire) were noteworthy gatherings for the north-west on the 13th, and on the same day there were 180 or more at Pitsford Reservoir (Northamptonshire), a splendid number for one of the most inland counties of all. On the 14th there were over 70 at Burton (Cheshire) and still 54 at Leigh Flash, while on the 15th there were 22 at Shotton Pools (Flintshire) and 11 at Leighton Moss (Lancashire). Anglesey had smaller numbers about this time, while in the Trent valley, near Nottingham, a total of 70 on the 12th was exceeded by 104 on the 13th. In contrast, there were only two at Spurn (Yorkshire) during the peak period, though as early as 1st May there had been 34 and there were 18 as late as the 31st. In general, the biggest gatherings were reported from the Channel coast and from that part of England which lies between a westwards extension of the Humber and a line from the Severn eastwards. Almost all the directional observations throughout the period referred to parties travelling between east and north-east.

We have doubtless received only a small proportion of the records of Black Terns during May, but these probably include a good percentage of the larger concentrations and so we believe that we have sufficient to make the following daily totals of birds reported useful as a guide to the size and duration of the movement:

Friday 6th	6	Tuesday 10th	272	Saturday 14th	293
Saturday 7th	6	Wednesday 11th	809	Sunday 15th	248
Sunday 8th	88	Thursday 12th	1,215	Monday 16th	19
Monday 9th	191	Friday 13th	912	Tuesday 17th	9

It is interesting to compare this picture with that which emerged from a similar brief survey that we made of the Black Tern movements in May 1959 (*Brit. Birds*, 52: 272-273 and 276-277). Then there were two distinct peaks, a small one during the 9th-11th and a much larger one during the 22nd-25th. Even so, the total number of birds this year appears to have been considerably higher. The total reported in the eight days around the main peak in 1959 was 2,500, while in a similar eight-day period in 1960 (8th-15th May) it was 4,068. Finally, it is interesting to draw attention to the fact that there is no question of a week-end bias in the picture that emerges of the 1960 passage: by far the three heaviest days were the Wednesday, Thursday and Friday. Please could we have as soon as possible any records of Black Terns during May that have not yet been reported to us?

In addition to the Black Terns, we have now come to expect a sprinkling of White-winged Black Terns (*Ch. leucopterus*) each May and this year has been no exception. One in Hampshire on 11th May was reported last month (p. 278) and in the next eight days three more were identified in other counties (bringing the total for the spring to five). Firstly, there was one at Dovercourt (Essex) on the same day as the Hampshire bird, and then single birds at Portland (Dorset) and Hanningfield Reservoir (Essex) on 18th and 19th May respectively. Following the Gull-billed Tern (*Gelochelidon nilotica*) reported from Selsey Bill (Sussex) in April and mentioned in our previous issue (p. 278), five other single birds of this species were identified at the same place in the first half of May—on the 1st, 4th, 9th, 14th and 15th. All were passing east, as was a Caspian Tern (*Hydroprogne caspia*) there on the 6th. In the middle of June, on the 19th, three Gull-billed Terns were seen flying west over the point at Dungeness (Kent).

OTHER RARER SPECIES FROM SOUTHERN EUROPE

The same general period, the middle twenty days of May, provided the main spring influx of vagrants from the south of Europe and of Fenno-Scandian migrants off course on their way north. Apart from the terns, there was very little in the way of wide-spread movements linking up the observations, but this mid-May scattering of species in these categories seems to be an annual event. This year perhaps the most interesting list of records came from Norfolk. In that county there was a Crane (*Megalornis grus*) at Breydon Water on 4th and 8th May and an Alpine Swift (*Apus melba*) at the same place on the 12th; a female Red-footed Falcon (*Falco espertinus*) at Cley on the 13th; a Lesser Grey Shrike (*Lanius minor*) at Salthouse Heath on the 15th and 16th; four single Woodchat Shrikes (*L. senator*), at Salthouse Heath on the 16th and 17th, at Blakeney Point from the 20th to the 22nd, and at Cley and Thornham on the 26th; a Tawny Pipit (*Anthus campestris*) at Salthouse Marshes from the 15th to the 18th; an Icterine Warbler (*Hippolais icterina*) singing at Colt Head on the 20th; and a first-summer male Subalpine Warbler (*Sylvia cantillans*) at Blakeney Point on the 22nd and 23rd. The last two were caught and ringed.

Another Icterine Warbler was trapped at Dungeness (Kent) on the 21st—the day after the Norfolk one—while the Woodchat Shrikes and Red-footed Falcons were watched in several other areas, as now seems to happen every May with these two species. There was a first-year female Red-footed Falcon by the river Stour at Lammooon (Dorset) from 16th to 24th May, and what was considered to be an immature male was seen flying north-west over Farlington Marshes (Hampshire) on the 29th. Similarly, there was a Woodchat Shrike at Mucking (Essex) in the same period as the four in Norfolk and others were reported at Great Saltee (Co. Wexford) on 9th, 23rd and 28th May, at Lundy (Devon) from the 10th to the 13th

and on the 24th, at Fair Isle on the 12th, at Addington (Surrey) on the 13th, and at Gibraltar Point (Lincolnshire) on 10th June. On the same day as the Woodchat at Fair Isle an Isabelline Shrike (*L. cristatus isabellinus/phoenicuroides*) was trapped there. The first British record of one of these red-tailed shrikes (very different in appearance from the red-backed shrikes but now generally regarded as conspecific with them) was in 1950 at the Isle of May (*Brit. Birds*, 44: 217-219). As though this were not enough, a Lesser Grey Shrike was also a visitor to Fair Isle on 5th June. Some weeks after the Alpine Swift in Norfolk, single birds of this species were seen at Grunard Bay (Ross-shire) and Eccup Reservoir (Yorkshire) on 3rd and 4th June respectively.

Little Egrets (*Egretta garzetta*) are now also annually reported in May and this year single birds were seen by the River Clyst at Topsham (Devon) on the 20th and at Titchfield Haven (Hampshire) on the 29th. Other birds of the heron group included two White Storks (*Ciconia ciconia*), the first at Grove Ferry (Kent) on 26th May and the second at Cosham (Hampshire) on the 28th; two Little Bitterns (*Ixobrychus minutus*) stayed at Titchfield Haven (Hampshire) from 21st May; and Spoonbills (*Platalea leucorodia*) in ones and twos were reported from almost every east coast county from Kent to Lincolnshire and Yorkshire during May and June.

The most noteworthy Passerine species was Kent's second Red-rumped Swallow (*Hirundo daurica*) in a period of nine months: this bird has been recorded in Britain only eight times, but one was well seen at Yalding on 21st May. No less than three Great Reed Warblers (*Acrocephalus arundinaceus*) were reported from south coast counties, at Selsey Bill (Sussex) on 16th May, at Titchfield Haven (Hampshire) from the 18th to at least the 22nd, and at Par Beach (Cornwall) from 29th May to 2nd June. Melodious Warblers (*Hippolais polyglotta*) are chiefly recorded in the autumn, but this year two single ones were trapped at Skokholm (Pembrokeshire) on 23rd May and 3rd June. A Greenish Warbler (*Phylloscopus trochiloides*) was trapped and ringed at Spurn (Yorkshire) on 4th June and still present next day. Following the exceptional numbers of westward wanderers last autumn (*Brit. Birds*, 53: 46-47), it is no less interesting to note the presence of Red-breasted Flycatchers (*Muscicapa parva*) at Spurn and Flamborough (Yorkshire) on 15th and 21st May respectively; and, more remarkable still, a first-summer female at the Calf of Man on 21st June—only the second Manx record. A Red-throated Pipit (*Anthus cervinus*) was identified at Pagham Harbour (Sussex) on 10th May and there was a Tawny Pipit at Spurn on the 2nd, while Fair Isle had a Little Bunting (*Emberiza pusilla*) and a Short-toed Lark (*Calandrella cinerea*) on the 13th and 14th respectively.

Fair Isle also had her usual flush of Bluethroats (*Cyanosylvia svecica*) between 12th and 16th May, with as many as five on the 14th, and a laggard on the 22nd; in addition, there were single ones on the Inner Farne (Northumberland) and at Flamborough (Yorkshire) on the 21st and 22nd respectively. Another species of less regular occurrence in spring than in autumn is the Ortolan Bunting (*Emberiza hortulana*) and so we should mention one at Portland (Dorset) on 5th May, single birds at Fair Isle on the 12th and 21st, and a male at Great Saltee (Co. Wexford) on the 14th joined by a female on the 15th. At Great Saltee, too, a Grey-headed Wagtail (*Motacilla flava thumbergi*) and a Blue-headed Wagtail (*M. f. flava*) were trapped on 2nd May, while Fair Isle had a similar assortment—four Grey-headed and one Blue-headed—on the 11th-12th. Reports of Golden Orioles (*Oriolus oriolus*) were confined to East Anglia and the south-east except for one at Skomer (Pembrokeshire) on 28th May, two at St. Agnes (Isles of Scilly) in the first week of June and more on two other islands of the Scilly group about the same time; also one at Studland Heath (Dorset) on 4th June. Skokholm (Pembrokeshire) turned up a fairly late Fircerest (*Regulus ignicapillus*) on the 26th and 27th.

Hoopoes (*Upupa epops*) were seen in May in most south coast counties and in southern Ireland. Kent, for example, reported a total of six. There were also

several in Norfolk, odd ones in other parts of East Anglia and a scattering from Surrey across to Somerset, Monmouthshire and Merioneth. More unusual were one at Thornton-le-Dale and Levisham (Yorkshire) in late April, one at Tory Island (Co. Donegal) on 1st May, one at Breadsall (Derbyshire) from 2nd to 5th May, one at Redesdale (Northumberland) on 8th May, one at Spurn (Yorkshire) on 13th May and one at Grosmont near Whitby (Yorkshire) the next day, one at Speke (Lancashire) on 17th May and one at Woodthorpe (Nottingham) on 16th June. In Jersey (Channel Islands), on the other hand, it was considered a very poor year for this species.

AMERICAN AND ASIATIC SPECIES AND POSSIBLE ESCAPES

A few American and Asiatic birds were also reported during the spring. These include one or two earlier observations which have not previously received notice in these pages. First we should mention a male Ring-necked Duck (*Aythya collaris*) which stayed at Lurgan (Co. Armagh) from 20th March until at least the beginning of May. Two records of this species in England have been accepted in recent years (*Brit. Birds*, 48: 377-378; 52: 427-430) and it is generally considered that the possibility of escapes being involved is very remote. At the beginning of April two rare waders were identified on Bardsey Island (Caernarvonshire). The first was an American or Asiatic Golden Plover (*Charadrius dominicus*) on 6th April and the second a Grey-rumped Sandpiper (*Tringa incana*) on 8th and 9th April. More recently another American wader, a Spotted Sandpiper (*Tringa hypoleucos macularia*), was seen further south in Wales: this bird stayed by the River Taf at Whitland (Carmarthenshire) from 15th to 18th May.

On 26th May a Slate-coloured Junco (*Junco hyemalis*) was trapped at Dungeness (Kent). The only previous record of this American species in Britain and Ireland—on almost the same date 55 years ago (*Brit. Birds*, 48: 14)—has always been assumed to refer to a bird that had escaped from captivity, but the facts of the present case remain to be fully considered. Two Red-headed Buntings (*Emberiza bruniceps*) were reported, a male at Dungeness (Kent) on 15th May and another at Cley (Norfolk) on 4th June. In view of the strong likelihood that most Red-headed Buntings at large in Britain and Ireland are escapes from captivity (*Brit. Birds*, 43: 172), it should be added that from the excellent state of its plumage and the brightness of its head coloration the Cley bird was either wild or had been at large for a considerable period. Finally, it was generally considered that a Rose-coloured Starling (*Sturnus roseus*) which stayed at Lowestoft (Suffolk) from 13th to 18th May was not a wild bird: this conclusion was based on its tameness and curious feeding habits and on the dullness and wear of its plumage.

GULLS, WADERS, WATERFOWL, BIRDS OF PREY, LATE WINTER VISITORS

Among the many records of Little Gulls (*Larus minutus*) were a number from inland localities: one in Middlesex on 30th April and three in the same general area for at least the first three weeks of May; two in Northamptonshire from 13th to at least 5th May; three or four in Nottinghamshire between 8th and 12th May and one earlier (25th April). Iceland Gulls (*L. glaucooides*) were reported between mid-April and mid-May from St. Kilda, Co. Down, Flintshire, Dorset, Hampshire, Sussex, Norfolk, Yorkshire and Co. Durham. The only Mediterranean Black-headed Gull (*L. melanocephalus*) we have heard of during May was an immature with a black head at Selsey Bill (Sussex) on the 11th.

A feature of the wader passage during April, May and early June was the good numbers of Curlew Sandpipers (*Calidris testacea*) and to a lesser extent of Little tints (*C. minuta*), Spotted Redshanks (*Tringa erythropus*) and Wood Sandpipers (*T. glareola*). The largest group of Curlew Sandpipers reported was 20 at Titchfield Haven (Hampshire) on 26th April, but records of smaller parties came from many

places and Ireland had one of its very few spring records when one was seen at Lough Neagh (Co. Armagh) on 8th May. A female Red-necked Phalarope (*Phalaropus lobatus*) in summer plumage was observed at Altrincham (Cheshire) on 28th May. The only Temminck's Stints (*Calidris temminckii*) reported were single birds at Farlington Marshes (Hampshire) on 1st and 29th May. Among May records of Kentish Plover (*Charadrius alexandrinus*) were one at Cley (Norfolk) on 1st May and one on the Exc Estuary (Devon) on the 22nd. Five Dotterel (*Ch. morinellus*) at Skokholm (Pembrokeshire) on 7th May provided the first record for the island. Avocets (*Recurvirostra avosetta*) were recorded on various parts of the east and south coasts and some were seen inland in Nottinghamshire: five at Gunthorpe on 13th May and one there and at Netherfield on the 17th (*cf. Brit. Birds*, 53: 239). Inland occurrences of Turnstones (*Arenaria interpres*) included a maximum of seven in Nottinghamshire in mid-May and 12 at Harpenden (Hertfordshire) on 11th May.

There was a female Red-crested Pochard (*Netta rufina*) at Langtoft gravel pits (Lincolnshire) on 15th May. Four immature Bewick's Swans (*Cygnus columbianus bewickii*) remained late at Alveccote Pools (Warwickshire), staying until 1st May, on which day there was also a late Whooper Swan (*C. cygnus*) at Malltraeth (Anglesey).

Three or four Kittiwakes (*Rissa tridactyla*) were reported far inland in April and more remarkable was one at Netherfield (Nottinghamshire) on 22nd May. On this date there were still two immature Shags (*Phalacrocorax aristotelis*) at King George VI Reservoir (Middlesex) and as late as 26th June at least eight young Shags remained at Scaford Head (Sussex) (*cf. Brit. Birds*, 53: 280).

Several Ospreys (*Pandion haliaëtus*) were reported in April and May in various parts of the country and as late as 3rd June one was seen in Perthshire well away from Loch Garten (Inverness-shire) where a pair is again breeding this year. Among records of Marsh Harriers (*Circus aeruginosus*) away from the normal areas was one at Llyn Dinam (Anglesey) on 14th May.

Late winter visitors included Lapland Buntings (*Calcarius lapponicus*) at Spurn (Yorkshire) on the 7th, 14th and 22nd. Similarly, there was a pair of Snow Buntings (*Plectrophenax nivalis*) at Thornham (Norfolk) on 25th May (the last of a small passage at Fair Isle was seen on the 4th). The last Waxwing (*Bombycilla garrulus*) to be reported was a freshly dead bird at Fair Isle on 22nd April.

SUMMER VISITOR ARRIVALS

Several additions should be made to the list of early summer visitors reported last month. One of the most remarkable was a Nightingale (*Luscinia megarhynchos*) which was seen and heard at Browdown (Hampshire) on 31st March and the days that followed. Hardly less interesting, however, was the Sedge Warbler (*Acrocephalus schoenobaenus*) in song at the same locality on 25th March and subsequently. This is much earlier than the several Sedge Warblers in the second week of April referred to last month (p. 280), to which should be added single ones in Middlesex and Cornwall on 7th and 10th respectively.

We mentioned the early arrivals of Swifts (*Apus apus*) last month (p. 279) and have received a number of other records as a result. The main influx began, as we have already shown, on 24th April, but we have now heard of single birds at Lee-on-the-Solent and Browdown (Hampshire) on 9th and 18th April, followed by two at Fareham (Hampshire) and one at Barn Elms (Surrey) on the 23rd; we have already referred to three at Portland (Dorset) on this last date. By the 26th Swifts had reached Lancashire and Westmorland, by the 27th they were in Co. Durham and on the 28th they were reported as far north as Strathtay in Perthshire—the earliest there since 1946. In several parts of the country it was noted that the first arrivals were chiefly concentrated over gravel-pits and reservoirs and not over the breeding areas in the towns.

Notice to Contributors

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2. Notes should be worded as concisely as possible, and drawn up in the form in which they will be printed, with signature in block capitals and the writer's address clearly written on the same sheet. If more than one note is submitted, each should be on a separate sheet, with signature and address repeated. In the case of rarity records, any supporting description which is too detailed for publication should be attached separately.

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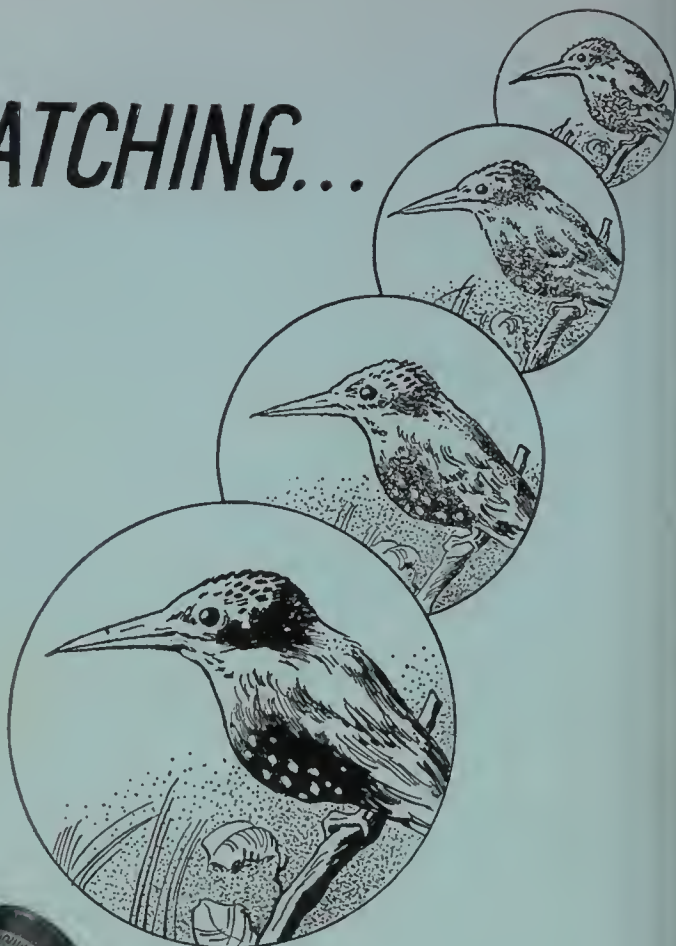
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Three
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August
1960

British Birds

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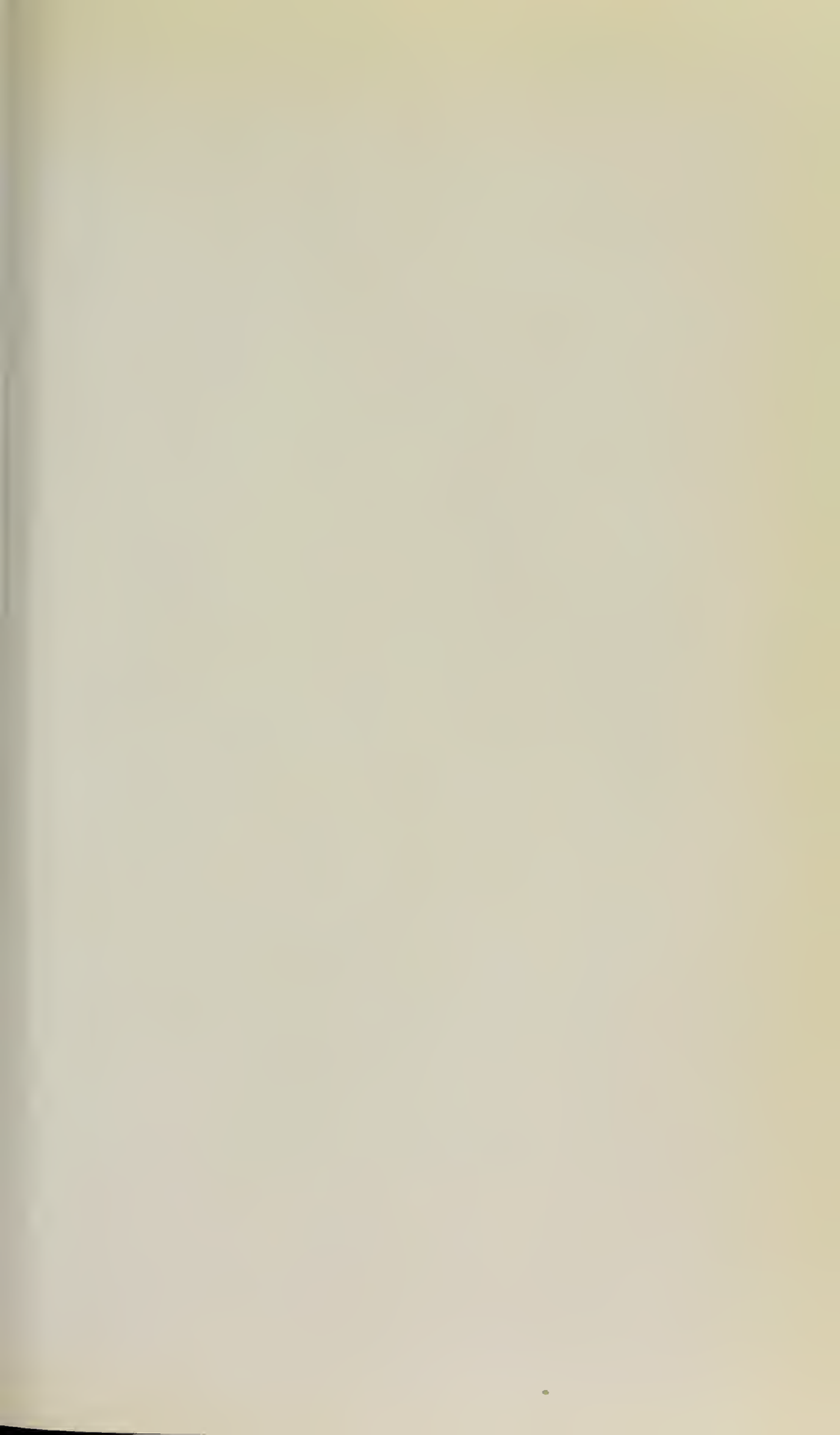




PLATE 45. Female Woodpigeon (*Columba palumbus*) about to brood nestling, her breast feathers raised ready to enclose it. Note the youngster's soft and spatulate bill, very different from that of the adult and specially adapted for thrusting into its parent's throat (page 324); the egg tooth is still on the tip (photo: R. K. Murlton)

British Birds

VOL. 53 No. 8

AUGUST 1960



Some photographs of Woodpigeon behaviour and feeding*

By R. K. Murton

Ministry of Agriculture, Fisheries and Food, Worplesdon, Surrey

(Plates 45-49)

UNTIL VERY RECENTLY little had been published about the behaviour patterns of the Woodpigeon (*Columba palumbus*). Then (Cramp (1958) described the main features of territorial and nesting behaviour throughout the breeding season, as a result of a study of this species in the London parks and squares. Reference to his paper will give some indication of the context of the displays illustrated by the accompanying series of photographs; but it must be remembered that his observations refer to an urban population. There the breeding season—and consequently the incidence of territorial calling, nest building and other associated behaviour—is entirely different from a rural one.

It is important to realise that, although the basic behaviour patterns are relatively few in number, they can be combined in varying ways and at different intensities to produce the range of displays seen at different times in the breeding cycle. For instance, similar movements to the regurgitatory muscular contractions seen when a Woodpigeon feeds its young are employed during the billing ceremonies of the adults, although different functions are served. Until much more is known about the factors releasing a given response in a Woodpigeon,

*One of these photographs was originally selected for inclusion among the "examples of the best recent work by British bird-photographers" published in *British Birds* in May 1960 (53: 219-221 and plates 25-32). However, this very common but wary species is so difficult to photograph at the nest and there are so few studies of the pair together that we asked Mr. Murton to provide a series of his outstanding pictures with this explanatory text.—Eds.

care must be taken in interpreting any form of display in terms of a stage reached in the breeding cycle.

The notes which follow are intended to serve as a description of the plates, but the opinions expressed over certain aspects of behaviour are based on an extensive series of field observations.

A MEETING OF THE PAIR AT THE NEST

Plates 46 and 47 show what happened when a pair of Woodpigeons met at the nest. They depict a conflict of impulses between two birds which, had they not been united by overlaying emotional bonds, would have proceeded to fight. Similar displays can, and do, arise at other times in the breeding season, although not necessarily at such high intensity. For example, if a female is attracted by a nest-calling male (see Cramp) and the two birds come close to each other, then displays of this kind may occur. It would be wrong to consider these behaviour patterns as representing greeting or nest-relief ceremonies.

The following sequence of events led to the displays shown in the four photographs on plates 46 and 47. (When first found, this nest had contained the usual clutch of two, but soon after hatching one of the chicks had been discovered hanging from an adjacent thorn and quite dead.) At 1500 hours BST on 28th August 1959 I entered an observation hide erected about five feet from the nest. Fifteen minutes later a male Woodpigeon alighted near-by and started calling, continuing to do so at intervals for an hour and a quarter. He was then involved in a fight with a neighbouring male, after which he dropped to the ground, walked through the undergrowth surrounding the hide and flew up to the nest at 1710 hours. He fed the youngster and when the female appeared ten minutes later, at 1720 hours, it (the chick) was no longer begging for food. The female at first showed aggressiveness towards the male, a posture which Cramp (1958) described in full. In this the head is held erect, the feathers are sleeked and the wings are partially opened. (Plate 48a, although not representing fighting, gives some idea of this aggressive posture: in that case the male had just arrived at the nest after being involved in a territorial dispute with some neighbouring birds and aggressiveness was still apparent in his stance.)

Such a situation as there was when the female arrived at the nest can lead to fighting, the two birds lining up side by side and beginning to hit each other with their wings. In this case, however, the male immediately lowered his head and pushed it under the female's body (plate 46a). In this species, submission involves lowering the head, withdrawing the neck, pointing the bill downwards and fluffing out the feathers. All these actions are the opposite of the aggressive posture and serve to make the head and white neck mark inconspicuous.

The submissive posture can be seen, for example, when a nest-calling male wishes to attract a mate. There is every possibility that this head-hiding ceremony has evolved from the general submissive posture. Not only are the components which stimulate aggression lessened by the hiding of the head, but they are also completely removed from the second bird's vision. Goodwin (1960) attached the same interpretation.

When plate 46a was taken the female had already lost much of her aggressiveness, as is indicated by the withdrawn head and the fluffed feathers. In plate 46b the next stage is shown with the male beginning to assume a more upright posture and in plate 47a each bird has almost accepted the other's presence at the nest. The elements of aggression have now largely disappeared and the male is seen caressing the female by gently nibbling her plumage. Goodwin (1956) described caressing and considered its function at the physical level to be the removal of ectoparasites. He drew attention to the fact that 99% of it is done where the bird cannot reach with its own bill. Although this appears to be true, there is no *a priori* evidence that the two are connected. Many other species also have ectoparasites without having found it necessary to evolve such means of cleaning themselves. Goodwin also pointed out that there is an aggressive component in caressing and stated that all the evidence suggested that the caressing bird would become angry and show aggression if there were not a bond of affection between it and the other. This latter suggestion seems more significant and possibly gives the answer to this aspect of behaviour. It is well known that in Passerine species a form of submission shown by the female is a reversion to nestling behaviour with quivering wings and wide-open gape. Young pigeons are fed by regurgitation and so gaping would be a meaningless way of begging for food. Instead, the young pigeon pushes its bill or head into the adult's breast feathers and strokes its head upwards towards the adult's bill. This process is repeated and has a stimulating effect on the parent. I think that this behaviour may not be far removed from feather fondling which is primarily centred on the same areas. Caressing by adult pigeons could thus represent a reversion to juvenile behaviour which serves as a submissive posture and is a parallel to the gaping of adult Passerines. Billing, which Cramp (1958) also described, could be another aspect of such reversion to nestling behaviour and comparable with the presentation of food items which is well known in the courtship feeding of other groups of birds. Food appears to be passed during the process of billing, although it is difficult to be certain.

Reverting to the photographs, the next stage is shown in plate 47b. After caressing, both birds proceeded to nod. Nodding is found in a

variety of circumstances, many of which were admirably described by Goodwin (1956). He gave reasons for believing that nodding is derived from nest-building and that its occurrence in other circumstances represents a ritualised intention movement. He also allowed the possibility, however, that nodding represents an original movement found when the impulse to attack is inhibited by fear or sexual attraction—in other words, that it represents a displacement activity. I favour this second interpretation. During nodding one notices the tendency for an upright aggressive position to be followed immediately by a reversion to submissiveness. Often the two birds stand side-by-side and their nodding movements are out of phase. This was the case in plate 47b. On the occasion illustrated by these photographs the nodding display was followed by the female's leaving the nest without attending to the young. The nestling remained inactive throughout and did not present any obvious extra stimulus which would release other behaviour patterns.

THE FEEDING OF THE YOUNG

Plates 48 and 49 show the way in which nestling Woodpigeons are fed and the accompanying legends describe this process. Plate 45 illustrates the specially adapted spatulate bill. In a normal brood of two young it is usual for the nestlings to sit side by side facing the parent and for them both to insert their bills into the adult's gape at the same time. If a third nestling is artificially introduced into the brood, it is found that one chick has to wait until the other two are fed and satisfied before it can obtain any food. As a result, one youngster usually lags behind in weight and, if it survives, may spend an exceptionally long time in the nest and still be underweight on flying. Even if there were no other reason at all, it is clear that this would help to fix at two the number of eggs laid by pigeons.

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Autumn "drift-migration" on the English east coast

By *David Lack*

Edward Grey Institute, Oxford

INTRODUCTION

PARTICULARLY THROUGH the studies of Williamson (1952, 1955, etc.), the view is now widely accepted that the appearances of Continental night-migrants on the British east coast in autumn are much too infrequent and irregular to be explained in terms of a regular passage there, and instead they are attributed to "drift-migration" with easterly winds. In connection with my radar studies of migration in the North Sea off Norfolk in September, to be published later, I thought it important to understand the conditions under which such migrants occur at the coast. Previous workers have concentrated on relatively short periods of heavy passage, but I thought that a fuller picture might result from an analysis of the birds present every day throughout the autumn over a period of years.

For this purpose I studied the occurrence at the English east coast observatories of the warblers, flycatchers and chats (using the last term for all Turdinae except the genus *Turdus*). These species comprise a closely related group of small night-migrants which occur very irregularly on the east coast when travelling between their Continental breeding grounds and their winter quarters; the latter are chiefly in Africa, though some winter in southern Europe and a very few in Asia. Thrushes of the genus *Turdus* were excluded because, though some individuals are evidently "drift-migrants", there is also a regular broad-front passage over the North Sea from breeding grounds in Scandinavia to wintering grounds in Britain (Lack 1959a). Hence the addition of the thrushes would confuse the issue, and I thought it best to keep to a group of species which, except for a few British departures, are nowadays termed "drift-migrants" whenever they appear at the observatories in autumn.

ACKNOWLEDGEMENTS

The records from the Norfolk observatory at Cley were particularly relevant to the radar study, but in the early years were incomplete, so I also studied the fuller material from Gibraltar Point, Lincolnshire, and Spurn Point, Yorkshire, which are in the same general area. I am extremely grateful to the organisers, R. A. Richardson, R. K. Cornwallis and R. Chislett respectively, for generously placing their

records at my disposal and for their considerable trouble in compiling summaries and answering queries. In addition I would thank the great number of bird-watchers, here unnamed, whose enthusiastic holiday labours provided the raw data. The value of such records lies in their continuity, and at Spurn in particular hardly any days were missed in the eleven successive seasons analysed here, a tribute to the proverbial tenacity of Yorkshiremen. I am also grateful to M. T. Myres of the Edward Grey Institute for the radar observations between 30th September and 17th October 1959, though their interpretation in relation to "drift" is mine, not his. Finally I would thank W. R. P. Bourne, R. Chislett, R. K. Cornwallis, P. A. D. Hollom, R. E. Moreau, M. T. Myres, R. A. Richardson and K. Williamson for their considerable trouble in criticising earlier drafts of this paper; even when their criticisms were not accepted, they were of great value in the extensive rewritings which followed.

THE THEORY OF MIGRATIONAL DRIFT

In its modern form, the theory of "migrational drift" was formulated by Williamson in a series of papers (especially those of 1952 and 1955, but also others). This theory has been fully accepted by almost all workers on migration in Britain (though not abroad), and its acceptance, when not explicit, is implicit in nearly all publications from the British bird observatories. As it has been developed gradually, it is not stated in complete form in any one paper, so it is not easy to summarise, but the following is my impression of current belief on this subject among observatory workers, I hope a fair one:

The Scandinavian night-migrants making for Iberia and Africa depart in autumn chiefly in clear anticyclonic weather and keep over the land so far as possible. On reaching the southern end of Norway, they turn south-east along the coast, but are forced to cross the sea at the Skagerrak, after which, with many other such migrants from further east and north-east, they follow the coastal "leading-lines" southward down the eastern side of the North Sea. In the absence of easterly winds these birds do not enter Britain at all, but with such winds some of them are drifted westward over the North Sea and may reach any part of the British east coast, occasionally in large numbers. Basic to this view is the idea that the North Sea, which stretches for 400 miles between Norway and East Anglia, constitutes a dangerous hazard for small land-birds on migration, which they avoid crossing in so far as is possible.

As regards the nature of the drift with easterly winds, Williamson, arguing from his experience on Fair Isle, rejected Ritchie's view (1940) that a migrant's track over the sea is the resultant between an oriented heading and the wind; and both before, and especially since, Sauer's demonstration (1955) that certain warblers navigate by the stars, he associated drift-arrivals primarily with full overcast, when migrants cannot see to navigate by either coastal leading-lines or the stars. Williamson (see especially 1959, p. 363) further rejected Yapp's view (1956) that when migrants are disoriented in full overcast at sea they drift down-wind at the speed of the wind. Instead, he postulated that under these conditions the disoriented birds descend

low, assess the direction of the wind from their displacement relative to the waves, then re-orient themselves and fly down-wind until they reach land, where they alight. This habit Williamson regarded as an important adaptation for enabling migrants disoriented by fog at sea to regain the land as rapidly as possible. He also claimed that, through their restricted breeding range, the rarities among drift-arrivals might provide "markers" of where the drift started.

I recently advanced the following criticisms of these views (Lack 1959a):

(i) Evidence from other parts of the world indicates that small Passerine land-birds regularly migrate across at least 700 miles of sea, hence it need not be supposed on general grounds that the North Sea represents a significant hazard for small migrants.

(ii) The Passerine night-migrants detected by radar leaving eastern England in spring and autumn do not follow coast-lines, but travel on a broad front, putting out to sea when their heading lies that way and (unless disoriented) maintaining this heading at sea. (Coasting movements in this area have been detected by radar during the day in autumn, so are not necessarily below radar range.) In my view, the idea that Passerine night-migrants follow coastal "leading-lines" can be abandoned. As one consequence of this, it need not be supposed that the night-migrants leaving Norway in autumn turn south-east until they come to the Skagerrak; they may set out from southern Norway on a broad front. This view would mean that the Skagerrak is of no particular importance as an area where drift might start.

(iii) Radar has fully confirmed Ritchie's view that the normal track of a migrant over the sea, by day or night, is the resultant between its heading and the wind (Lack 1958). Further, the only movement of Passerine-type echoes detected by radar during the big "drift-arrivals" on the east coast from 2nd to 4th September 1958 was south-westward, and since the wind was south-easterly this was presumably a "laterally displaced" movement. Radar has also shown that migrants at sea in fog may be disoriented and, because the observatory workers have normally correlated drift-arrivals with full overcast, and because one would expect disoriented birds to be tired, I supported Yapp that the big falls of drifted migrants at the coast were probably due to "disoriented drift" (in which, as shown later, I was mistaken). I added that radar does not necessarily rule out Williamson's alternative view of drift as a "down-wind directed flight", since such birds, flying close to the waves, might be undetectable, but I made certain objections to this idea and held that such a habit would not, on balance, be adaptive.

(iv) I was sceptical of the value of rarities as "markers" and, since they appear at the observatories in disproportionately high numbers, supposed that there was something abnormal about their occurrence.

In his latest paper, Williamson (1959) replied to some of these criticisms and added important new facts and arguments, acceptance of which would seem basically to alter his earlier theory (though he did not himself say this). Thus he found the big arrivals from 2nd to 5th September 1958 extremely hard to understand because they occurred in clear weather, and he postulated that at least the eastern rarities involved began their down-wind drift several hundred miles inland. So in this instance down-wind flight, which he postulated to be an adaptation to bring migrants disoriented by fog at sea quickly back to land, apparently started far inland and continued in clear

weather over the sea. He did not discuss the radar evidence (Lack 1959ab) that the drift under discussion was laterally displaced and argued that, since the eastern rarities involved typically migrate south-east, they could not have reached England by either lateral displacement or disoriented drift. He then postulated that these rarities were not on migration but on a post-juvenile dispersal, which presumably differentiates them from the common migrants and removes their value as "markers" of the main drift.

Apart from Williamson's latest paper, "drift-migration" in the area reviewed here has been discussed by Jenkins (1953), Cornwallis (1954, 1955, 1956) and Chislett and Ainsworth (1958). Jenkins attributed the big arrival of Continental migrants on the English east coast on 1st and 2nd October 1951 to four factors: (i) an anticyclone in Scandinavia providing suitable conditions for departure after a long disturbed spell unsuitable for migration, (ii) fog in the sea-areas off Norway and Sweden disorienting the migrants, (iii) easterly winds then drifting them westward over the North Sea, and (iv) heavy overcast bringing them low, so that they alighted on reaching the English coast. He attributed drift to birds disoriented in full overcast being passively transported down-wind (later Yapp's view), whereas Cornwallis (like most other observatory workers) upheld Williamson's view of drift as an active re-oriented down-wind flight, and Chislett and Ainsworth supposed that it was "the unconscious drift westward of birds purposefully migrating south in autumn" (presumably Ritchie's view). Before continuing, the reader might like to make up his own mind as to which of these three interpretations might be correct.

THE PLACE OF ORIGIN OF THE MIGRANTS

The chief aim of this paper is to analyse the weather conditions in which Continental night-migrants do and do not occur on the English east coast, and it is therefore necessary to reach a provisional decision as to the area or areas from which these birds started. Jenkins (1953) assumed that on 1st and 2nd October 1951 the birds left southern Scandinavia, and this view is apparently the usual one. But if the birds migrated wholly down-wind across the North Sea, they presumably started from Scandinavia with a north-easterly wind, from Germany with an easterly wind and from Belgium (or further south-east) with a south-easterly wind. (I do not wish to imply that such a complex of down-wind origins for migrants reaching eastern England has been postulated by any observatory worker, but since this idea might be derivable from the "drift-theory" I thought it important to discuss the possibility at this stage.)

There are five reasons for thinking that, at least sometimes, the

Continental night-migrants in eastern England have not come down-wind. Firstly, they presumably did not do so during the big arrival of 2nd-4th September 1958 when there was a south-easterly wind and the only Passerine-type echoes detected by radar in the area moved, on average, somewhat west of south-west. I consider that these echoes came from the Continental Passerine migrants, since otherwise it is necessary to suppose both that the big arrivals at the coast were too low to be detected by radar and also that the big south-westward arrivals seen on radar were of other birds which left no visible trace at the coast. (In this period radar also detected westward movements of wader-type echoes, but no bird-echoes moving north-west and down-wind.) This was the third largest arrival in the eleven autumns studied here, but might have been unusual as it occurred in clear weather.

Secondly, the north Norfolk coast at Cley and Blakeney runs east and west, so is open to arrivals from the sea between slightly north of east and slightly north of west, but not to the south. On the supposition that "drift-migrants" over the sea normally alight on reaching the coast, those moving down-wind with a south-easterly wind in the southern North Sea would presumably land chiefly in east Suffolk and east Norfolk, and also beyond East Anglia's "drift-shadow" in east Yorkshire and further north. If any landed at Cley or Gibraltar Point, they would be individuals that continued migrating over East Anglia but dropped either on reaching the sea again in north Norfolk or after a brief further crossing at the mouth of the Wash; and one would expect the numbers doing this to be small compared with those alighting in east Norfolk and east Suffolk. This has not been the case. Nor with an ESE wind, which would place Spurn beyond the "drift-shadow", have there been much larger arrivals at Spurn than at Gibraltar Point or Cley. That, as shown later, most big arrivals at Cley and Gibraltar Point have occurred with south-easterly winds points strongly against the birds having come down-wind.

Thirdly, with easterly winds in the northern North Sea at night but a north-westerly wind in the southern North Sea next morning, there was a big arrival, including typical Continental species, at Gibraltar Point on 22nd August 1954, and moderate arrivals at Spurn on 30th September 1957 and 9th September 1958, the last also occurring at Cley (Gibraltar Point was not manned). If all these birds came off the sea, it could not have been down-wind, since there is land to the north-west of Spurn and Gibraltar Point. Again, there have been several moderate arrivals at the three observatories, sometimes simultaneously, with easterly winds in the northern North Sea but light south-westerly winds in the southern North Sea, as on 23rd September 1953, 20th

August and 24th September 1955, and probably 27th August 1949. These birds presumably came in off the sea against the wind, and were actually reported doing so at Cley on 24th September 1955 (*per* R. A. Richardson).

Fourthly, on the English east coast Pied Flycatchers are extremely common passage migrants, but Spotted Flycatchers are sparse. Yet both species breed abundantly in north-western Europe, both are conspicuous on migration, and both are common on autumn passage through the Iberian peninsula. Ringing recoveries show that the Pied Flycatcher is a pronounced south-westward migrant in autumn throughout its breeding range in western Europe. But, while the Spotted Flycatchers from north-western Germany and further south in western Europe migrate south-west, those from Sweden go south-east or south (Creutz 1941). The comparative paucity of Spotted Flycatchers among the migrants on the English east coast therefore suggests that these migrants have come primarily from Scandinavia, and not from further south in western Europe. Nor is there any suggestion that Spotted Flycatchers are proportionately much commoner on those arrivals with easterly or south-easterly winds than on those with north-easterly winds.

Fifthly, a critical test is provided by those species of chats and warblers which breed commonly in northern and western Germany, Holland, Belgium and northern France, but rarely in Scandinavia. If the Continental arrivals in eastern England come primarily from Scandinavia, these species should always be rare, but on a down-wind hypothesis they should be well represented in arrivals occurring with easterly or south-easterly winds. Two of the species concerned, the Marsh and Icterine Warblers, do not provide a fair test since they migrate south-east, but this does not apply to five others, namely the Stonechat, Black Redstart, Nightingale, Grasshopper and Reed Warblers. Table I shows clearly that all these species are sparse at the east coast observatories; further, some of those recorded there were probably departing British residents.

Perhaps none of these five arguments is by itself convincing, but together they constitute an extremely strong case. Moreover, the only apparent evidence to the contrary comes from the occasional occurrence of eastern rarities, which are not, in my view, reliable "markers" of where the main Continental arrivals originated and anyway do not point to a down-wind passage, as discussed later. I have therefore postulated that the main Continental migrants reaching eastern England have normally come from southern Scandinavia, and that this is the appropriate area in which to analyse weather conditions at the start of the night.

SPECIES AND TIMES SELECTED

All the species analysed in this paper, with their scientific names, are listed in Table I and the notes beneath it. As already mentioned, only chats, warblers and flycatchers have been considered. Nearly all of these pass through eastern England during September, with a few somewhat earlier or later, so the period analysed was from 20th August to 10th October inclusive. Two of the species included, the Robin and Goldcrest, differ from the rest in migrating chiefly in October, and some of the Goldcrests perhaps stay the winter, but otherwise both occur in similar circumstances to the rest, and I thought it best not to make any arbitrary exclusions from my selected group of birds. I used the Spurn and Gibraltar Point records for the eleven seasons 1949-1959 inclusive, during which a few days were missed at Spurn and rather more at Gibraltar Point (but at both observatories such days were clearly recorded). Only on 29th September 1951 were no observations made at either Spurn or Gibraltar Point, so the full record covers 571 days. Cley was less fully manned, but I was able to use the records for seven seasons, 1952 and 1954-1959 inclusive.

Except possibly for a few Whitethroats that bred at the observatories, all the birds counted and analysed in this paper were passage migrants, and most of them came from the east side of the North Sea. But some passages of Wheatears, Whinchats, Whitethroats and/or Willow Warblers, with occasional other British summer resident species, occurred in the absence of typical Continental migrants like the Pied Flycatcher, usually in disturbed westerly weather. These were probably departures from Britain (labelled "B" in Table II, as distinct from "C" movements which included typical Continental species).

For purposes of analysis, I reckoned the number of arrivals of each species each day at each observatory as the excess of that day's number over that of the previous day, or two days earlier, whichever was the greater. I allowed for the number two days earlier because skulking species are hard to count accurately. Hence when the recorded number for a species on one day was similar to that two days earlier but was smaller on the intervening day, this was more probably due to some being overlooked than to a departure followed by an arrival. I would have made exceptions to this when such a change was observed simultaneously at two observatories or in several species, but this did not, in fact, occur. While this rule was needed to allow for observational omissions, some migrants undoubtedly leave on the day of their arrival and sometimes perhaps many do so; hence the totals reached by this means are certainly too small. It should be added that the numbers of certain numerous species at Cley in 1952, 1954 and 1955 were only estimated, so the figures for this observatory are rather less accurate than for the others.

ANNUAL TOTALS

The average number of arrivals of each species each autumn at each observatory is shown in Table I. The figures for Spurn are effectively complete, but a few days with big arrivals elsewhere were missed at Gibraltar Point or Cley. Further, some big and moderate movements at Spurn and Gibraltar Point, though not at Cley, almost certainly consisted of birds leaving Britain, and the averages after omitting obvious instances of this type are given on the right-hand side of the table. On 10th October 1959 some 4,000 Goldcrests arrived at Spurn, raising the annual average for this species from 44 to 410, an almost meaningless figure since it depends on one day and

TABLE I—AVERAGE NUMBER OF ARRIVALS OF EACH SPECIES OF MIGRANT EACH AUTUMN, 20TH AUGUST-10TH OCTOBER 1949-1959, AT THREE BIRD OBSERVATORIES ON THE EAST COAST OF ENGLAND

	Spurn	Gibraltar Point (some days missing)	Cley (1952 and 1954-1959)	Omitting movements of purely British origin Gibraltar Point	Spurn
Wheatear (<i>Oenanthe oenanthe</i>)	110	93	107	93	48
Stonechat (<i>Saxicola torquata</i>)	6	+	2	6	+
Whinchat (<i>Saxicola rubetra</i>)	56	16	49	40	11
Redstart (<i>Phoenicurus phoenicurus</i>)	69	45	98	63	40
Bluethroat (<i>Cyanosylvia svecica</i>)	1	1	6	1	1
Robin (<i>Erithacus rubecula</i>)	78	41	11+	76	38
Sedge Warbler (<i>Acrocephalus schoenobaenus</i>)	10	4	3	6	2
Blackcap (<i>Sylvia atricapilla</i>)	5	3	4	5	3
Garden Warbler (<i>Sylvia borin</i>)	14	10	29	13	9
Whitethroat (<i>Sylvia communis</i>)	51	60	21	29	20
Lesser Whitethroat (<i>Sylvia curruca</i>)	3	6	6	3	4
Willow Warbler (<i>Phylloscopus trochilus</i>)	82	92	59	50	36
Chiffchaff (<i>Phylloscopus collybita</i>)	5	5	8	5	4
Golderest (<i>Regulus regulus</i>)	410	36	22+	410	34
Spotted Flycatcher (<i>Muscicapa striata</i>)	12	11	15	9	8
Pied Flycatcher (<i>Muscicapa hypoleuca</i>)	102	51	48	99	50
All species (including rarer birds below)	1,026	479	499	920	311

There were also between one and two per year per observatory of Black Redstart (*Phoenicurus oebrosus*), Barred Warbler (*Sylvia nisoria*) (three per year at Cley) and Red-breasted Flycatcher (*Muscicapa parva*), and less than one per year per observatory of Nightingale (*Luscinia megarhynchos*) and the following warblers: Grasshopper (*Locustella naevia*), Reed (*Acrocephalus scirpaceus*), Aquatic (*Acrocephalus paludicola*), Melodious (*Hippolais polyglotta*), Icterine (*Hippolais icterina*), Subalpine (*Sylvia cantillans*), Greenish (*Phylloscopus trochiloides*), Wood (*Phylloscopus sibilatrix*), Arctic (*Phylloscopus borealis*) and Yellow-browed (*Phylloscopus inornatus*). The annual averages for Robin and Golderest are so greatly affected by huge arrivals on 1st-2nd October 1951 and 10th October 1959 respectively as to be almost meaningless. Movements at Cley are not considered to include any of purely British origin; hence this observatory's column may be looked at in relation to those on the right.

that the last in the whole series. (Gibraltar Point was not manned that day, and Cley reported "many".) The averages for the other common species were also much affected by a few big arrivals, notably of Robins on 1st and 2nd October 1951, so that none of the actual figures mean very much in themselves.

These totals suffice, however, to show that while "drift-migration" has attracted great attention in Britain, and is exciting because of the accompanying rarities, the numbers involved are utterly trivial by Continental standards. At Spurn between the dates specified, the average number of arrivals of all the species studied here was only 1,026 each autumn (twenty a day) and this is reduced to 920 each autumn if birds obviously leaving from Britain are omitted, and to 556 if the freak arrival of Goldcrests on 10th October 1959 is omitted. The corresponding averages for Gibraltar Point and Cley were rather smaller, but a few big arrivals were missed there. By way of comparison, my wife and I think that we probably saw more migrants of the same species round St. Jean de Luz in south-western France on 30th September and 1st October 1949 than were seen at any of the three observatories during the eleven autumns studied here; but we did not take counts and met an unusual situation, not appreciated at the time, since, after an anticyclone favouring migration over France, a depression moved in with much rain, doubtless precipitating the birds (*cf.* Lack 1953, p. 275). Again, Feeny (1959) reckoned that many more than 100,000 night-migrants were present on Heligoland on 14th September 1959, more than ten times as many as at one of the English observatories during the eleven autumns studied here!

Table I shows further that the annual average at one observatory exceeded 100 individuals for only three species, the Wheatear, Pied Flycatcher and Goldcrest (the last due entirely to one day's great fall). The average for the Robin at Cley would also have exceeded 100 if the autumn of 1951 (when counts were incomplete) had been included, since 2-3,000 Robins occurred there on 1st October that year. The other fairly numerous species were Whinchat, Redstart, Whitethroat and Willow Warbler. Since the period analysed covers the time of the main passage of nearly all the species concerned, the figures in Table I are effectively those for the whole autumn, except for the Robin and Goldcrest, of which fairly large numbers passed after 10th October in some but not other years.

The birds seen at the observatories were not, of course, all that entered eastern England on the days concerned. But even if migrants arrived at similar density along the whole east coast, the totals involved must have been very small by Continental standards. Further, it is likely that numbers are concentrated at the observatories, which are sited at places famous for migrants in the old collecting days. In

this connection I may add that, though I knew at the time that from 2nd to 4th September 1958 several hundred migrants arrived each day at Blakeney Point, I could find hardly any fifteen miles further east on the Norfolk coast, at Overstrand, and a watcher there could have had no idea that even a moderate arrival was taking place. The reasons for concentration at the observatories require further study. It might be primarily that they attract more of the birds passing overhead to alight there, but there is also the possibility of birds moving along the coast by day after their arrival and stopping in the isolated patches of cover at these headlands.

Table I confirms the well-known scarcity of the Lesser Whitethroat and Wood Warbler as passage birds, due to the fact that these two species migrate south-east and not south-west from northern Europe, the same holding to a lesser extent, as already mentioned, for the Spotted Flycatcher. On the other hand, as stressed by Williamson (1959), certain rare species such as the Barred Warbler and Red-breasted Flycatcher are, considering their normal range, unexpectedly regular. On 18th September 1959, for instance, in bushes behind the sand-dunes at Sea Palling in east Norfolk, M. T. Myres and I saw three Whinchats, two Redstarts, three Whitethroats, two *Phylloscopus*, one Pied Flycatcher and three Barred Warblers. Obviously these numbers were not proportional to the migration overhead, which would have meant that the Barred Warbler was one of the two commonest species travelling.

WEATHER FACTORS ANALYSED

For the start of migration, I analysed the weather situation each night in southern Scandinavia, using the map for midnight in the British Daily Weather Reports, the map for 1800 hours being rather too early in the evening at this time of the year. For the southern North Sea I used the map for 0600 hours, which is probably more relevant than that for midday, though some Continental arrivals started after noon and more continued then.

The general weather situation in southern Scandinavia was classified under one of three headings, "A" for settled anticyclonic weather, "D" for disturbed weather due to the vicinity of a depression or active front, and "T" for a situation changing from one to the other or when southern Scandinavia was about midway between centres of high and low pressure. This transitional category was used as little as possible.

The direction of the wind, at midnight in the north-eastern North Sea and at 0600 hours in the southern North Sea, was assumed to be parallel to the isobars, which is approximately true at 3,000 feet and over, where radar indicates that much, if not most, Passerine migration occurs (Lack 1960b). The same practice has become standard in American migration research (A. M. Bagg *in litt.*). The assessment from the isobars in the southern North Sea was checked by reference to the morning figures in the British Aerological Reports for the wind at 900 metres above Hemsby, Norfolk (or during 1949-1951 at 3,000 feet above Downham Market, Norfolk), and these latter figures were also used for the speed of the wind. Assessment of wind-directions from the isobars is difficult only with a centre of high

pressure or a front in the critical area. Surface winds were not analysed, firstly because they do not seem relevant to most nocturnal migration, secondly because the weather reports do not normally record them in the North Sea itself, and thirdly because the surface wind at stations bordering the North Sea is subject to purely local fluctuations, due to sea-breeze effects or in southern Norway to the influence of adjacent mountains.

It was hard to know the most satisfactory way to assess overcast. But, as birds are usually disoriented only in full overcast, I eventually noted "f" when fog or mist, "r" when rain and "+" when 8/8ths cloud were recorded on the weather maps, and otherwise left a blank. These symbols were used for the north-eastern North Sea when fog, rain or total cloud was recorded at any one of four stations, two in southern Norway and two in north-western Denmark, at either 1800 hours or midnight, and for the southern North Sea when fog, rain or total cloud was recorded at either of the stations in northern Holland, at Spurn or at Gorleston (on the east Norfolk-Suffolk boundary) at 0600 hours. Since fog, in particular, is often local or temporary, this usage almost certainly overweights the tendency for migrants to have met full overcast on the night or morning in question, but it was adopted as it seemed specially important to determine whether, and if so how often, arrivals might occur in the absence of full overcast.

As the migrants present were not in all cases counted exactly, I decided not to analyse them strictly numerically, but to group the arrivals in five categories, as follows: (i) "big", those which averaged 50 or more in a day at any two observatories combined; (ii) "moderate", those which averaged 20-49; (iii) "small", those which averaged 10-19; (iv) "very small", those in which 10-19 arrivals were recorded at one observatory but the average for any two observatories was less than 10; and (v) "negligible", those in which fewer still arrived (though not necessarily none). As already explained, all passages were further subdivided according to whether they included typical Continental species or only species which might have started from Britain.

To demonstrate my methods, I have set out in Table II the figures and weather data for all the big movements. I prepared similar tables for all other days, but, while the size of movement on each date is listed in Appendix A, the weather factors have not been set out there, since they can be obtained from the Daily Weather Reports. In any case, other workers might prefer to analyse different weather factors, for the available choice is great. It may be added, however, that should any reader have preferred to postulate a different area of origin for the migrants, the categories used here for both the general situation and the wind-direction in southern Scandinavia were so broad that they would often have held for other parts of north-western or western Europe. Again, should any reader have preferred to use the direction of the surface wind in the North Sea, inferred from the coastal stations, instead of the wind-direction at 3,000 feet inferred from the isobars, the differences involved would have been too small to affect appreciably the broad survey in Table III, though they might have somewhat modified the more detailed analyses in Table IV.

Finally, anyone who has tried to classify continuous variables into discrete categories will appreciate that border-line decisions have to be taken fairly often. I have done my best with these, but certain

BRITISH BIRDS

TABLE II—THE BIG ARRIVALS (AT LEAST 100 BIRDS IN A DAY)
AT THREE BIRD OBSERVATORIES ON THE EAST COAST
20TH AUGUST-10TH OCTOBER 1949

Date	Number of arrivals			Continental or British	Weather in S Scandinavia at midnight		Full overcast
	Spurn	Gibraltar Point	Cley		General situation Earlier Midnight		
7.9.49	26	140	—	B	T	T	
9.10.49	67	42	—	C	(T)A	A	+
28.8.50	50	50	—	B	D	T	
24.8.51	193	0	—	C	D	A	
31.8.51	156	4	—	B	D	T	+
1.9.51	4	300	—	B	D	T	+
{ 1.10.51	337+	309+	2,000	C }	DT	A	+
{ 2.10.51	259+	many	many	C }		A	
10.9.52	70	36	2260	C	DT	A	
{ 21.8.54	181	24 }	2260	C }	DT	A	+
{ 22.8.54	12	112 }		C }		A	
31.8.54	51	88	0	B	D	D	+
3.9.54	2	191	0	B	D	T	+
25.8.56	41	62	5	B	T	D	+
2.9.56	54	25	146	C	DT	A	+
{ 20.9.57	240 }	133+ }	251+	C }	D	T	+
{ 21.9.57	217 }			C }		A	
{ 2.9.58	77	0	213	C }		A	+
{ 3.9.58	132	129	287	C }		A	
{ 4.9.58	486	523	153	C }	A	A	
{ 5.9.58	202	1	25	C }		A	
21.8.59	98	7	40+	C	A	A	
6.9.59	177	8	45	C	A	A	+
{ 4.10.59	60	—	73	C }	A(D)	A	+
{ 5.10.59	85	—	31	C }		A	
10.10.59	24,000	—	many	C	A	A	

weather situations and wind-directions were hard to allocate. However, while others might have allocated them differently, such borderline cases were not frequent enough to change the broad picture which it is the aim of this paper to present. I am also very conscious, as Williamson wrote to me (*in litt.*), that “there is a very great danger of over-simplifying an extremely complex situation in attempting to reduce these phenomena to a simple tabular statement”, but unless such a summary is made it seems impossible to elucidate general trends.

THE BIG PASSAGES

Table II emphasises the small numbers involved. On only two days, 1st October 1951 and 10th October 1959, did an arrival exceed 1,000

S COMBINED)

D

S North Sea at 0600 hours

Wind direction	Wind-speed (knots)
W	13
SE	11
SW	08
S	27
SW	18
W	15
E	29
E	18
E	27
ESE	08
NW	13
W	22
SW	25
W	21
ESE	24
E	(0)
SSE	10
SE	14
SE	21
SE	16
SE	16
SE	14
SE	11
SE	23
SE	20
SE	28

"C" means that typical Continental migrants were included, "B" that only British summer resident species were involved. "A" indicates settled weather, "T" transitional, "D" disturbed; the heading "Earlier" to the first of the two "General situation" columns refers to the previous five days. "+" means that full overcast was recorded by at least one station (a) round the Skagerrak at 1800 hours or at midnight, and (b) on the coast of north Holland or Norfolk or at Spurn, Yorkshire, at 0600 hours. Wind directions were assessed from isobars, but for the southern North Sea were checked by the aerological report for 0500-0900 hours from Hemsby in Norfolk (during 1949-1951 from Downham Market in the same county). On 1st October 1951 it was clear in the southern North Sea at 0600 hours, but there was total cloud after noon when the birds arrived.

birds, and on only one other occasion, 4th September 1958, did it exceed 300 in a day at one observatory. There were seven other days with an average Continental arrival of at least 100 birds, namely 2nd October 1951, 10th September 1952, 21st August 1954, 20th and 21st September 1957, and 2nd and 3rd September 1958. If, however, arrivals on consecutive days are treated as part of the same movement, the eleven autumns studied here included only six movements in which the number of Continental arrivals reached 100 per observatory per day, while in three autumns, those of 1950, 1953 and 1955, there was no Continental arrival that exceeded 50 birds in a day at one observatory.

Yet, though the "big" arrivals were rare and small, they included most of the migrants seen at the observatories in the period studied.

Thus the numbers at Spurn in the 26 days in Table II comprise nearly two-thirds of all those seen there during the eleven autumns, and their exclusion would have reduced the annual average for all species at Spurn from 1,026 to 373.

Table II also shows the marked difference in the weather situation for "C" movements, which included typical Continental species, and "B" movements, which did not; nearly all big "C" movements occurred in settled weather with easterly winds, and all big "B" movements in disturbed or transitional weather with westerly winds in at least part of the North Sea.

TYPES OF FACTOR INFLUENCING ARRIVALS

Three separate groups of factors might influence the arrival of Scandinavian night-migrants in eastern England, (a) those affecting the volume of departures from Scandinavia during the night, (b) those affecting the extent of drift off-course in the North Sea during the night and next morning, and (c) those affecting the proportion of arriving migrants actually alighting at the English east coast rather than passing inland.

Considering (a), more migrants leave Scandinavia at certain times of year than others, but this has effectively been allowed for by restricting the present analysis to the period from 20th August to 10th October. The other important factor under this head is the weather at night in southern Scandinavia. It is generally considered that more migrants set off in anticyclonic than in disturbed weather, and this presumably holds for the small Passerine night-migrants leaving Scandinavia in autumn, even though radar observations on the departures of the same and similar species from Norfolk in September suggest that the difference may be smaller than commonly believed. Since, however, the arrivals of Scandinavian night-migrants in eastern England are irregular and infrequent, it is evident that, though conditions must be suitable for migrants to leave Scandinavia during the night, other factors, presumably those under (b) and (c), are much more important in determining the numbers at the observatories next day. For this reason, such arrivals do not provide a good means for analysing which particular weather factors in Scandinavia most affect departures, and, beyond a general classification into anticyclonic, transitional and disturbed weather, the situation in Scandinavia has not been considered further here.

Considering (b), easterly winds in the North Sea may be expected to drift migrants towards England and westerly winds to drift them away from England. The drift is presumably greater with strong than light winds and also, if the observatory theory is right, much greater in full overcast than in clear weather.

Factors under (c) that might influence the proportion of arriving migrants actually alighting at the coast have as yet received little attention. Frontal rain is known to precipitate birds in other areas. Also, if migrants usually fly lower with head-winds, with strong winds or in full overcast, these factors might increase the proportion alighting at the coast. So might any factors increasing the time for which they have been air-borne, as they might then be more tired on arrival.

Some weather factors might well have an influence in more than one of these three connections. For example, light winds on the Norwegian coast might favour more departures from there but less extensive drift afterwards (and conversely for strong winds). Again, strong winds or full overcast in the southern North Sea might influence not only the extent of drift but the proportion of migrants alighting at the coast. In addition, the weather factors themselves are linked. An anti-cyclone in southern Scandinavia is normally associated with easterly winds in the North Sea; fog tends to occur with light not strong winds; fronts are normally associated with westerly not easterly winds; and so on. These possible inter-relationships must continually be kept in mind, and they greatly complicate the unravelling of the critical factors involved.

THE MAIN WEATHER SITUATIONS

It is first desirable to make a broad division of the main types of weather situation and the main wind-directions, as in Table III. Here all winds with an appreciable easterly component have been grouped under east, and all with an appreciable westerly component under west; further, the very few occasions with an easterly or westerly wind in the northern North Sea and a north or south wind in the southern North Sea were grouped under east or west winds respectively throughout. A separate category was, however, made for the occasions when the wind was light variable or light northerly in the northern North Sea.

Table III supports the accepted view that Continental night-migrants occur in eastern England primarily in settled weather with easterly winds in the North Sea, for 16 of the 19 big arrivals occurred in this type of weather, as did 14 of the 37 moderate arrivals. Further, from the other angle, big and moderate Continental arrivals did not normally occur in disturbed weather with westerly winds, and 43% of the days with a negligible Continental arrival (including here the days with purely British-type movements) had such disturbed westerly weather. It should be noted, however, that some types of weather situation occurred much more frequently than others. Hence the variations are best evaluated by comparing the figures in Table III across rather

TABLE III.—INFLUENCE OF WEATHER SITUATION ON PASSAGE, BASED ON DATA FROM THREE BIRD OBSERVATORIES
ON THE EAST COAST OF ENGLAND, 20TH AUGUST-10TH OCTOBER 1949-1959

General situation	Wind in North Sea		Total number of days	Number of days in each category				British departures			Very small	Negligible passage
	In N part midnight	In S part 0600 hours		Continental arrivals		Very small	Big	Moderate		Small		
				Moderate	Small			Moderate	Small			
(i) A	E	E	63	16	14	11	5	—	—	—	—	17
(ii) A	N or v	E	22	1	3	5	2	—	—	—	1	10
(iii) A	E	W	20	1	2	3	2	—	—	1	—	11
(iv) A	W	E	29	—	2	5	2	—	—	1	1	18
(v) A	W	W	20	—	—	—	—	—	—	—	—	20
(vi) T	E	E	25	1	5	5	2	—	—	1	2	9
(vii) T	v	E	2	—	1	—	—	—	—	—	—	1
(viii) T	E	W	16	—	1	1	1	2	—	1	—	10
(ix) T	W	E	11	—	—	1	2	—	—	—	—	8
(x) T	W	W	77	—	2	1	2	3	1	3	1	64
(xi) D	E	E	6	—	1	—	1	—	—	—	—	4
(xii) D	E	W	58	—	3	2	1	1	4	3	5	39
(xiii) D	W	E	4	—	—	—	1	—	—	—	1	2
(xiv) D	W	W	218	—	3	10	15	1	10	14	12	153

The lower limit of mean size for big movements was 50, for moderate 20, for small 10, and for very small less than 10 though at least this number at one observatory. "A" indicates settled weather, "T" transitional, "D" disturbed. The wind was classified as "E" if it had any appreciable easterly element and "W" if it had any appreciable westerly, "v" when light and variable.

than down, *i.e.* by comparing the size of arrivals in each type of weather rather than the frequency of the different types of weather associated with each size of arrival.

INFLUENCE OF GENERAL WEATHER SITUATION IN SCANDINAVIA

As already mentioned, settled weather in Scandinavia is usually associated with easterly winds. Hence to assess the influence of the weather situation apart from the wind, it is best to consider only those days on which easterlies prevailed throughout the North Sea. Using these exclusively, Table III shows that big arrivals occurred on a quarter of such days in anticyclonic weather, but on only one of 25 in transitional weather, and on none of six in disturbed weather. Again, the proportion of such days with negligible Continental arrivals was a little over a quarter in settled weather, about a half in transitional, and two-thirds in disturbed.

Similarly, if the days with an easterly wind in only part of the North Sea are compared, big, moderate or small Continental arrivals occurred on 28 out of 71 in settled weather, but on only seven out of 29 in transitional and on only seven out of 62 in disturbed.

Hence with similar wind-directions in the North Sea, the number of Continental arrivals was greatest when the weather in southern Scandinavia was anticyclonic, smaller when it was transitional, and least when it was disturbed. This fits the view that departures are favoured by anticyclonic weather, but this conclusion cannot be accepted with certainty until the possible influence of other, and perhaps associated, weather factors has been excluded. It should also be added that arrivals were not restricted to anticyclonic conditions, since one big and nine moderate ones occurred with transitional weather in southern Scandinavia and seven moderate ones with disturbed weather there; and at least most of these were probably genuine departures from Scandinavia, not redetermined movements from England (discussed later).

INFLUENCE OF PREVIOUS WEATHER SITUATION

Earlier workers have, in general, supposed that especially large migratory movements occur on the first fine day after a disturbed spell and, as already mentioned, Jenkins (1953) attributed the big arrivals of 1st and 2nd October 1951 to this cause. I tested this point for all the big Continental arrivals in Table II, where the column headed "General situation earlier" refers to the five nights before that of departure. This shows that only nine of the big Continental arrivals were preceded by a disturbed spell, the other ten following a period of anticyclonic weather. Likewise, if arrivals on consecutive days are treated as part of the same movement, only six big movements

were preceded by disturbed weather and the other six by anticyclonic, the latter including two of the three biggest ones (during 2nd-5th September 1958 and on 10th October 1959). Similarly, of the 21 moderate arrivals in settled weather, nine were preceded by an anticyclonic spell, seven by mixed or transitional conditions, and only five by disturbed.

This point is best tested for the 63 days with settled weather and easterly winds throughout the North Sea (as this reduces the other variables that might be involved). In this type of weather there were big and moderate arrivals on 30 days, of which 15 were preceded by anticyclonic conditions, three by mixed and twelve by disturbed. But of all the 63 days with this type of weather, rather more were preceded by a settled spell than by a disturbed one (in the proportion of five by settled, one by mixed and three by disturbed weather). Hence big and moderate arrivals were, proportionately, a little more likely on the first day of settled weather after a disturbed spell than on a day of settled weather preceded by several similar days. But the difference was very small and is probably attributable to another factor, since light winds (which are characteristic of a spell of anticyclonic weather) militate against big arrivals, as shown later.

I conclude that, with settled weather in Scandinavia in autumn, any presumptive hold-up of departures due to previous bad conditions had no appreciable influence on the number of Continental migrants reaching eastern England. Similarly, radar evidence suggested that emigration from Norfolk in spring was not unusually large on the first fine night after a disturbed spell (Lack 1960a).

BROAD INFLUENCE OF WIND-DIRECTION

The influence of the wind-direction is best seen by considering each type of weather situation separately. Table III shows that, in settled weather, big and moderate Continental arrivals occurred on nearly half the days with easterly winds throughout the North Sea, but on only nine of the 71 days with easterly winds in only part of the North Sea, and on none of the 20 days with westerly winds throughout the North Sea. Similarly in transitional weather, big and moderate arrivals occurred on six of the 25 days with easterly winds throughout, on only two of the 29 days with easterly winds in only part, and on only two of the 77 days with westerly winds throughout. Hence easterly winds were favourable and westerly winds unfavourable for these arrivals, so at first sight the term "drift" seems fully justified, but the possible influence of other associated weather factors must again be kept in mind and in particular, as shown later, the strength of the wind. It should be repeated that a few arrivals occurred with westerly winds throughout the North Sea.

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Table III shows that there were seven big, 15 moderate, 24 small and 23 very small passages which did not include any typical Continental

migrants such as the Pied Flycatcher, and that nearly all of these, including all the big and moderate ones, occurred with disturbed or transitional weather in southern Scandinavia and with westerly winds in at least the southern North Sea. Indeed, the only exceptions were four small or very small movements in settled weather, and four others in transitional weather, with easterly winds in at least part of the North Sea, all of which might have been true Continental arrivals in which, by chance, no typical Continental species were noticed.

"British-type" movements were fairly frequent at Spurn and Gibraltar Point, sometimes but by no means always on the same day, but, of the 69 such movements involving at least ten individuals at one of these two observatories, only two small ones occurred at Cley (and one of these was in settled weather with an easterly wind, so was probably a true Continental arrival). This fits well with the view that the birds involved were departing British summer residents. For radar has shown that the main direction of migration over eastern England at night in September is SSE, and one might therefore expect that migrants travelling over the land in this direction would sometimes be held up at Spurn or Gibraltar Point, which have sea to the south and east of them, but not at Cley and Blakeney, which have sea only to the north. Radar has also shown, however, that such nocturnal departures over the land in September occur primarily in settled cold weather with northerly winds, and not in disturbed and warm south-westerly conditions. Hence these passages at Spurn and Gibraltar Point were evidently not part of the main migration of the species. Perhaps they consisted of night-migrants continuing SSE by day in rather unsuitable weather, turning south on reaching the east coast and then being checked on arriving at a headland with sea to the south. In at least two instances, as shown later, such movements were restricted to the early morning. Further study of this type of passage is needed.

SETTLED WEATHER WITH EASTERLY WINDS THROUGHOUT NORTH SEA

Though most big and many moderate Continental arrivals occurred in anticyclonic weather with easterly winds throughout the North Sea, so also did eleven small, five very small and 17 negligible ones, so this type of weather requires further analysis. The influence of the wind is examined further in Table IV, and the influence of overcast in Table V; while, in addition, Mr. J. F. Scott of the Oxford University Unit of Biometry kindly carried out statistical tests using not the categories in Table IV but the average number of arrivals per observatory on each day. With this latter method, however, it is hard to know how much weight to attach to the very few extremely big arrivals, which on an arithmetical scale dominate the results. On either method

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TABLE IV—INFLUENCE OF WIND ON CONTINENTAL ARRIVALS IN SETTLED WEATHER WITH EASTERLIES THROUGHOUT THE NORTH SEA, BASED ON DATA FROM THREE BIRD OBSERVATORIES ON THE EAST COAST OF ENGLAND, 20TH AUGUST-10TH OCTOBER 1949-1959

	Number of days with arrivals of each size			
	Big	Moderate	Small and very small	Negligible
<i>Wind in north-eastern North Sea at midnight</i>				
NE	3	3	3	5
E	1	0	4	5
SE	12	11	9	7
<i>Wind in southern North Sea at 0600 hours</i>				
NE	0	5	4	5
E	3	2	1	4
SE	12	3	7	6
SSE(S)	1	4	4	2
<i>Mean speed of winds between E and S in early morning at 900 metres above Norfolk</i>				
	19 knots	20 knots	9 knots	11 knots

This table analyses all 63 days in the first line of figures in Table III. The wind was classified as SSE(S) in the southern North Sea on the days when the isobars indicated that it was south-easterly there, while the aerological reports showed that it was from 170° to 180° (rarely just west of south) over Norfolk. The mean speed for NE winds in the southern North Sea was 8 knots for moderate arrivals, 10 knots for small and very small ones, and 14 knots for negligible ones.

the only factor with a statistically significant influence was the speed of the wind in the southern North Sea.

Wind-direction

Table IV suggests that a SE wind is more favourable for arrivals than a wind between E and NE. Thus big and moderate arrivals were proportionately twice as frequent with a SE wind in the north-eastern North Sea as with an E or NE wind there (23 out of 39, or 59%, compared with seven out of 24, or 29%). A similar relationship held for big, but not for moderate, arrivals with a SE wind in the southern North Sea. Further, of the three big arrivals with a NE wind in the north-eastern North Sea, two occurred with a SE wind further south and the other with a strong E wind further south; hence no big arrival took place with a NE wind throughout the North Sea. Further, only two of the 14 moderate arrivals occurred with a NE wind throughout the North Sea (the three others with a NE wind in the south took place with a SE wind in the north, and the other with a NE wind in the north occurred with a strong E wind in the south). On the other hand, the wind was north of E throughout the North Sea for five negligible arrivals and E throughout the North Sea for two more.

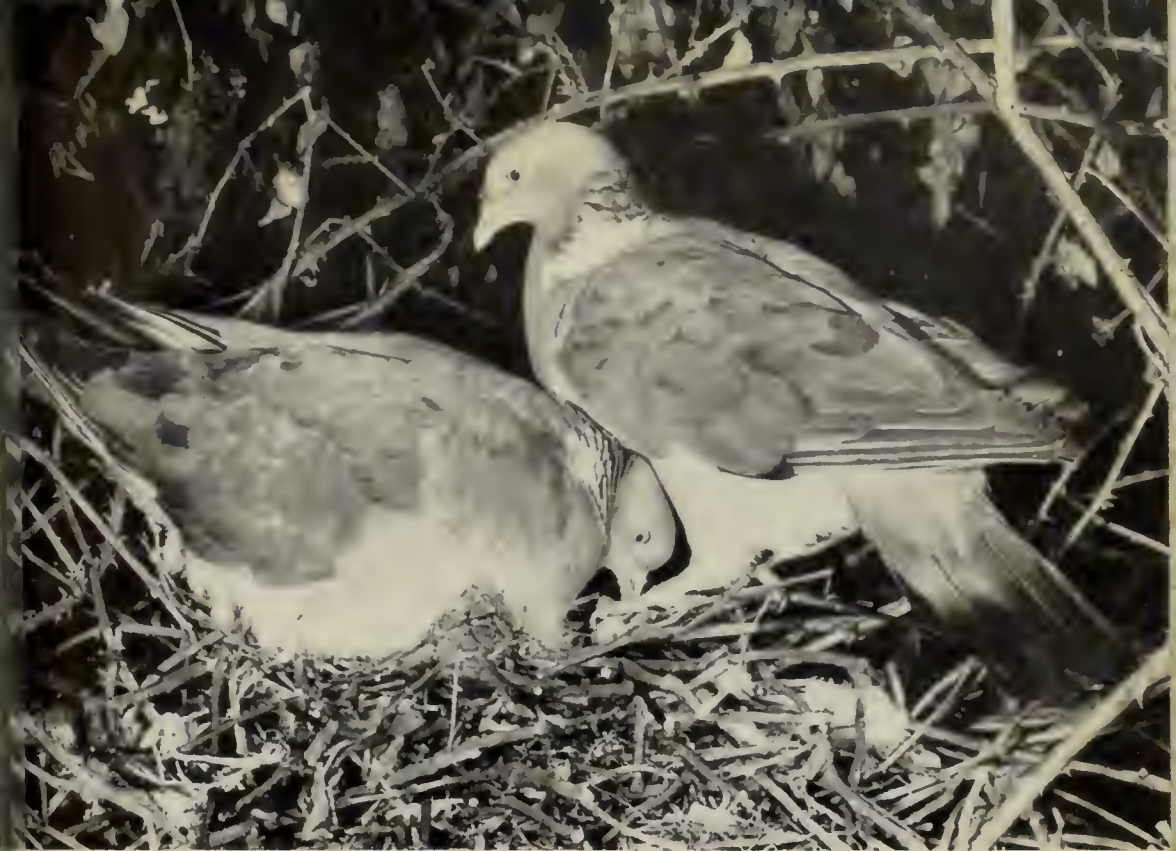
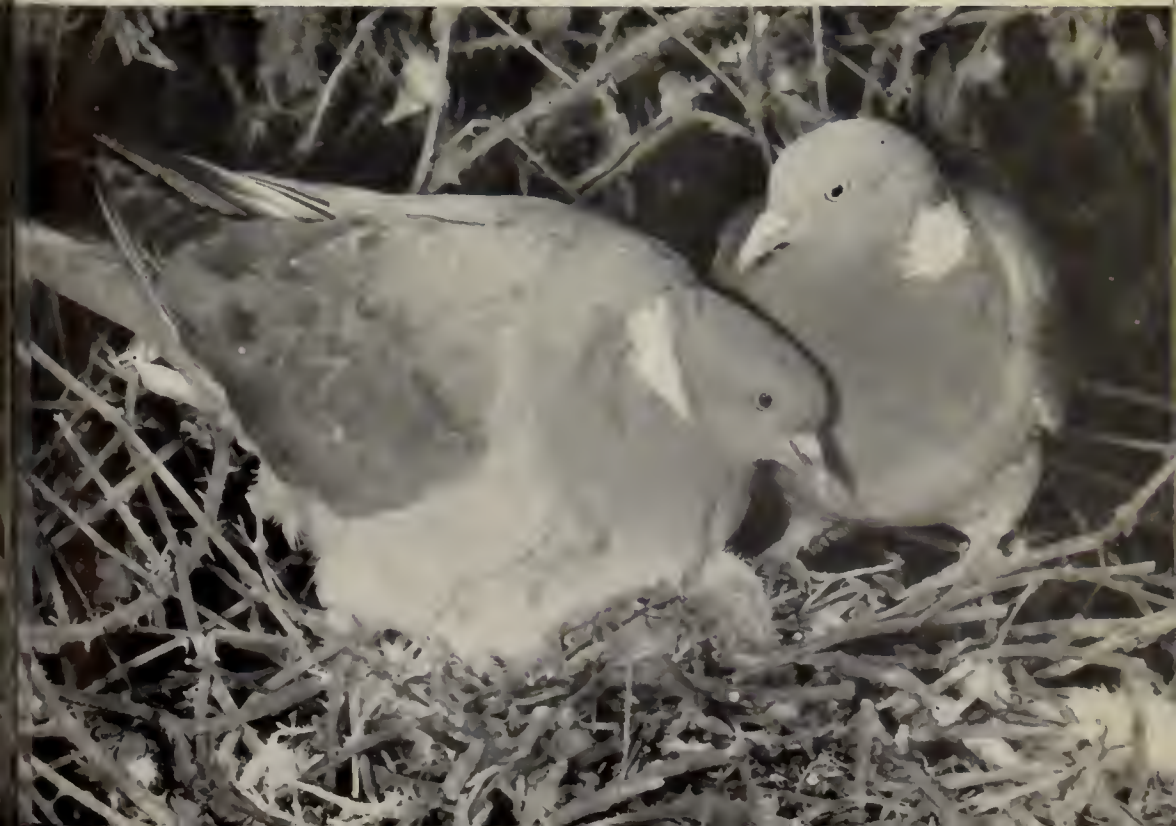


PLATE 46. Woodpigeons (*Columba palumbus*) meeting at the nest, a conflict of impulses. Above, the male is hiding his head beneath the female's body, following aggressive behaviour on her part (page 322); the way she is erecting her feathers indicates that this is now lessening. Below, her aggression has abated (shown by the lowering of the head) and the male is beginning to stand upright again. His position here is identical with that in nest-calling (page 322) (photos: R. K. Murton)



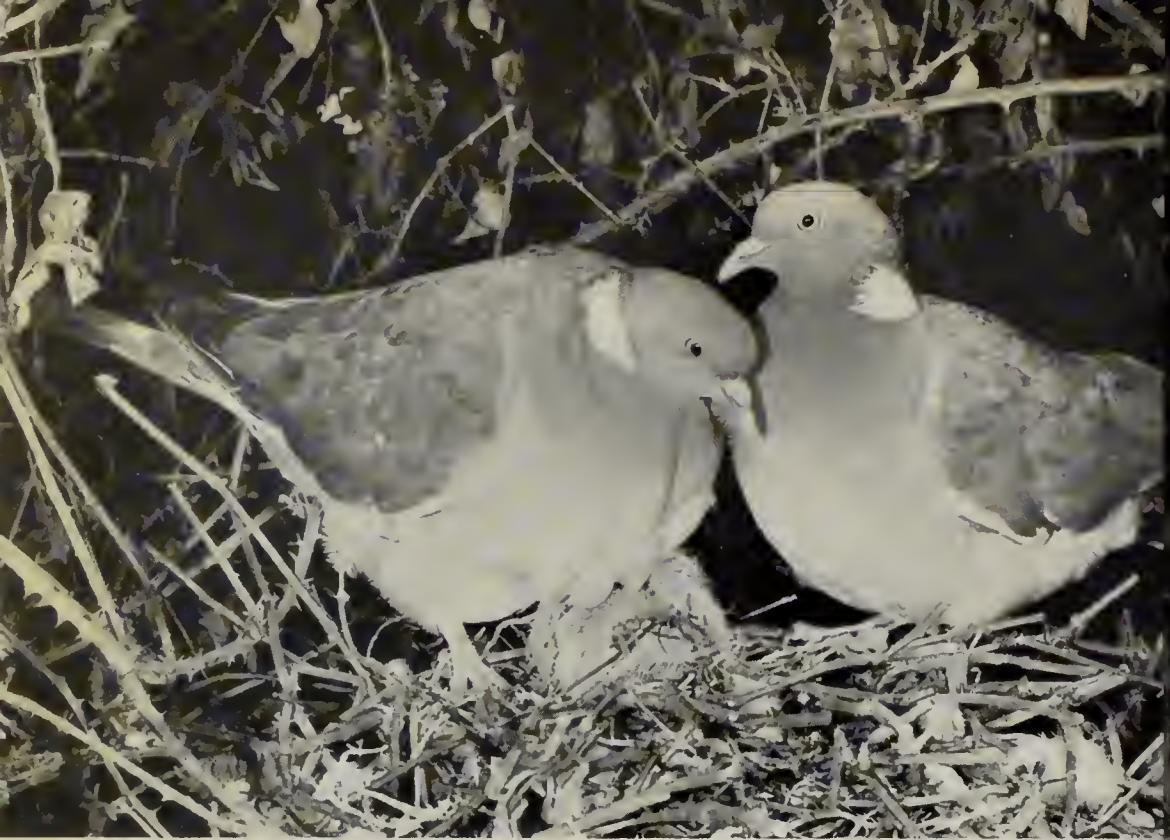
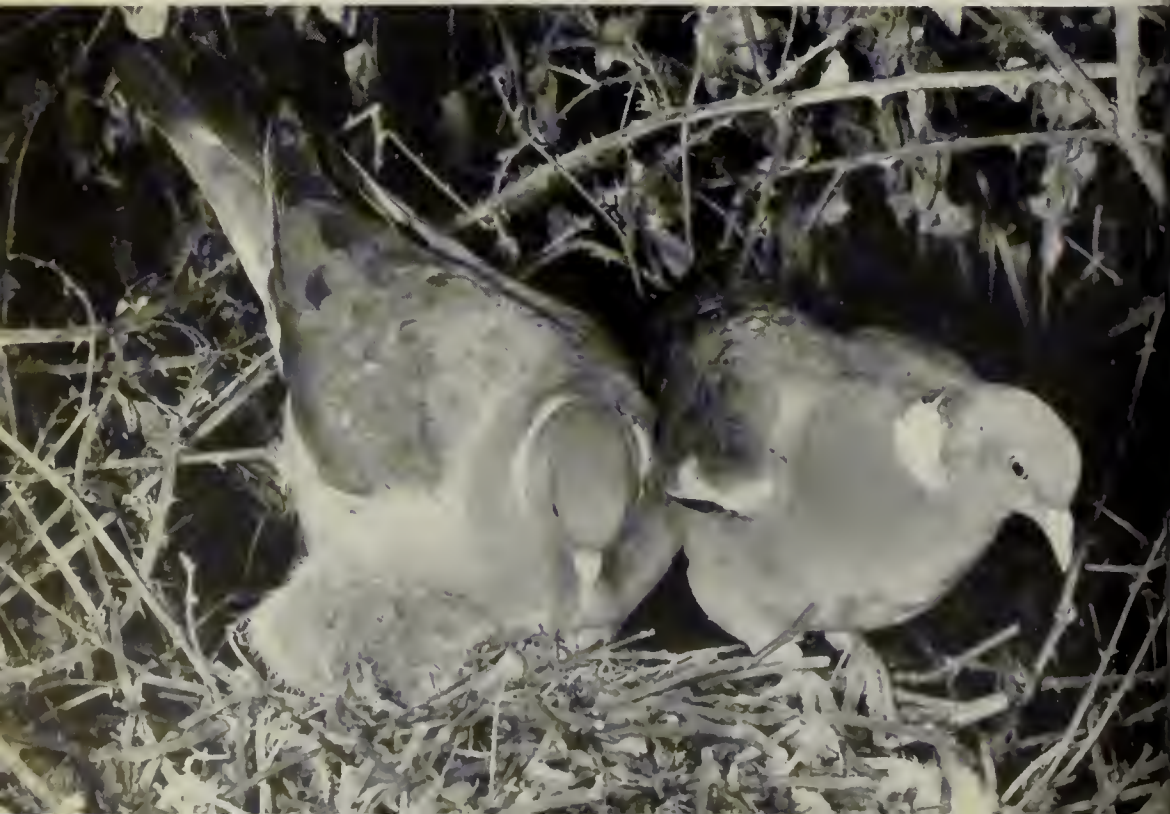


PLATE 47. Woodpigeons (*Columba palumbus*) meeting at the nest, the next stage. Above, the male is caressing the female by gently nibbling her plumage (page 323); aggression has now disappeared and the two birds have accepted each other's presence. Below, nodding display as the pigeons stand side by side (pages 323-4); the female (still on the right) has partially raised her wings, an action associated with fighting, while the male is holding his close to his body (photos: R. K. Murlton)



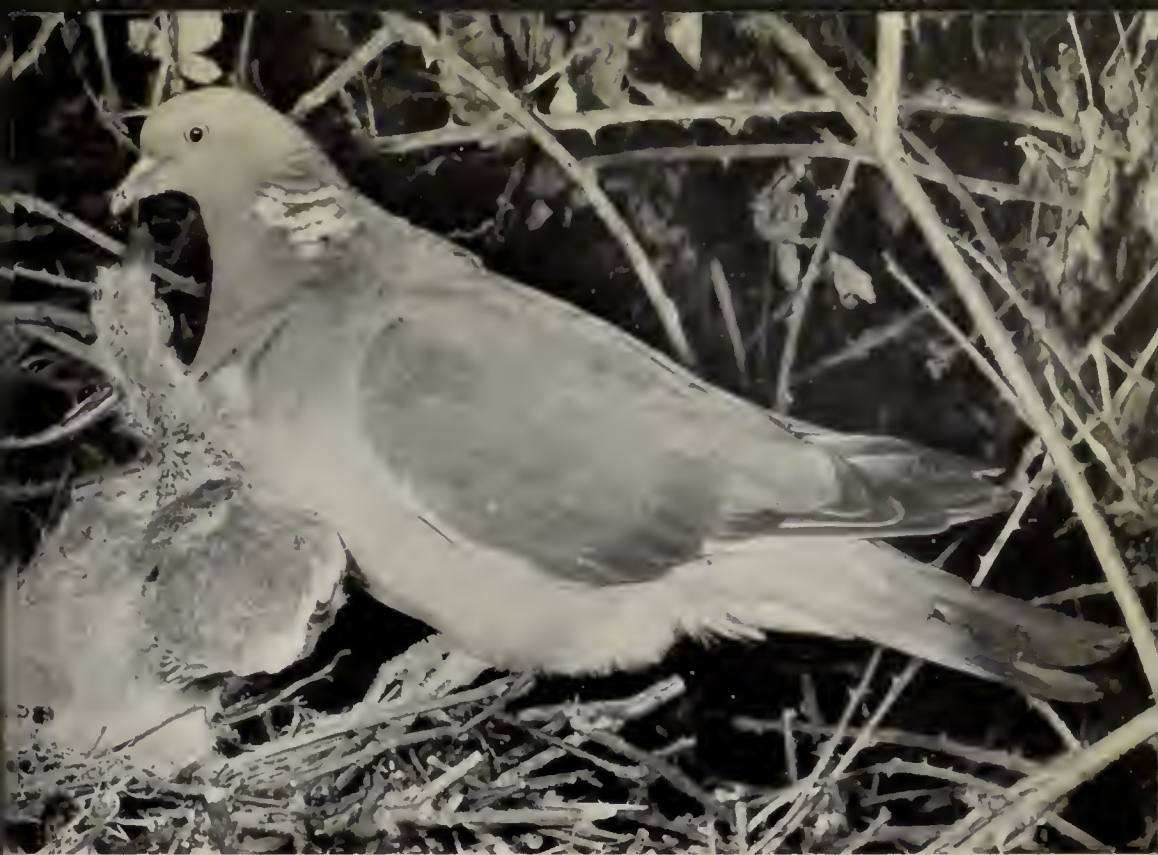
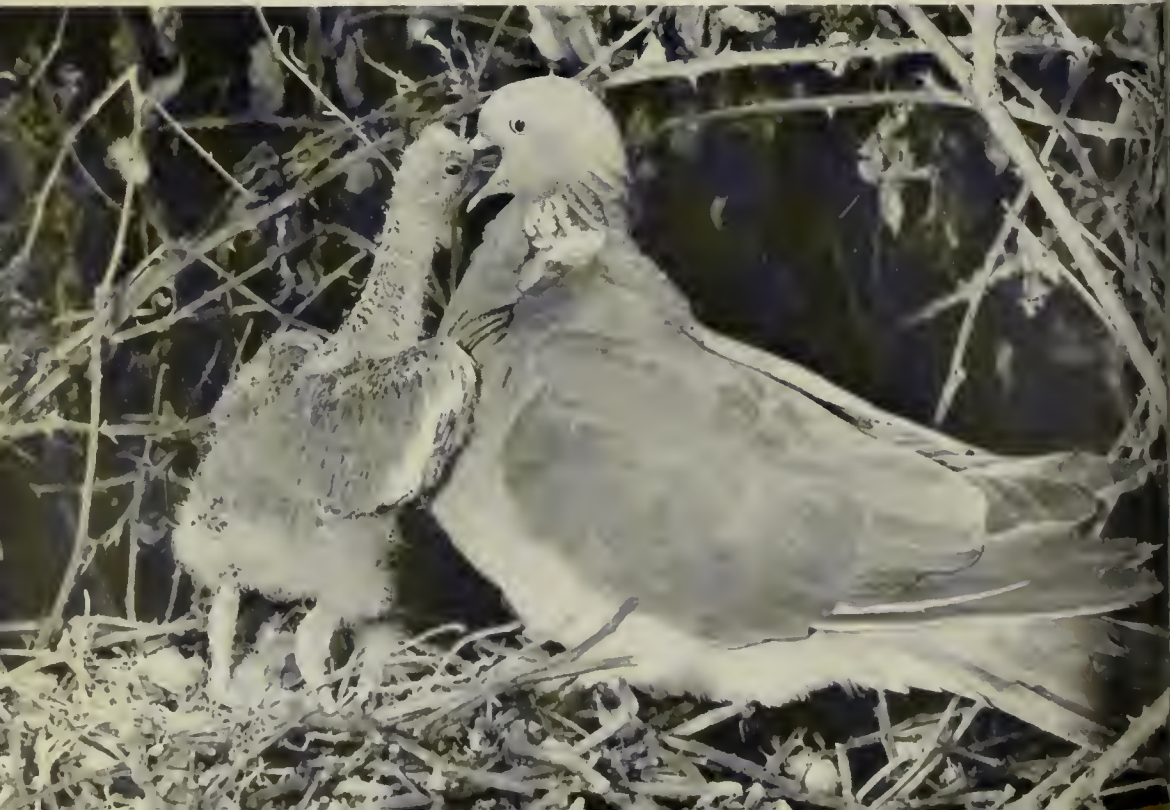


PLATE 48. Male Woodpigeon (*Columba palumbus*) arriving at nest to feed young. Above, the nestling is begging for food while its parent is in a partially aggressive posture, having just been involved in a territorial dispute with a neighbouring pair (page 322). Below, the male lowers his head so that the nestling can insert its bill into his gape to receive the food. In a normal brood of two, both youngsters thrust their bills into the adult's throat at the same time (page 324) (photos: R. K. Murton)





PLATE 49. Female Woodpigeon (*Columba palumbus*) pumping food from her crop into the youngster's specially adapted spatulate bill which is thrust up her throat. She jerks her head up and down to assist the passage of the food and the nestling does so in accompaniment, the extremes of the action being shown in these two photographs. Muscular contractions cause the old bird's neck feathers to stand upright. The feeding nestling normally keeps its eyes closed (*photos: R. K. Merton*)



Wind-speed

Hence arrivals in eastern England are probably (though not certainly) favoured by cross-winds from the SE as distinct from following winds from the NE. But, since the wind was SE throughout the North Sea for six negligible and seven small or very small arrivals, a SE wind in itself does not necessarily result in a big arrival. One critical factor is evidently the speed of the cross-wind in the southern North Sea. Thus for E, SE and SSE cross-winds, the average speed at 900 metres above the east Norfolk coast was 19-20 knots on the mornings with big and moderate arrivals, but only 9-11 knots on those with small or negligible ones, and the difference was statistically significant. A strong cross-wind presumably causes more extensive drift, and it might also cause the migrants to fly lower, so that more of them tend to alight on reaching the coast. The last part of the note under Table IV shows that a similar relationship with wind-speed did not hold for NE winds, as might be expected since these are tail-winds.

Figures for the upper winds in the north-eastern North Sea are not published in the British weather reports, but those for the surface wind in southern Scandinavia suggest that arrivals in England are favoured by light not strong winds there, presumably because migrants set out from southern Scandinavia chiefly with light ones. Thus for no big arrival did the surface wind exceed 15 knots in southern Scandinavia on the previous night.

As already mentioned, seven small and six negligible arrivals occurred with a SE wind throughout the North Sea, but on most of these occasions the wind was light in the southern North Sea and on the rest it was strong (20-25 knots) in south Norway: these two factors between them might be enough to explain the paucity of arrivals on these 13 days.

Overcast

All previous workers on drift have stressed the importance of overcast, except in the case of the big arrivals from 2nd to 5th September 1958. As already mentioned, however, it is hard to know how to assess it, and the method used probably exaggerates its frequency while leaving the possibility that migrants sometimes met overcast in part of the North Sea when it was unrecorded at the coastal stations. But if, as may be presumed, overcast at the coastal stations is correlated with overcast in the adjacent North Sea, then this method should reveal general trends.

Table V shows that, of the twelve nights on which fog was recorded round the north-eastern North Sea, three-quarters were followed by a big or moderate arrival in eastern England. Hence fog in this area possibly had some influence, but it was at most very subsidiary, since three-quarters of the big and moderate arrivals occurred when fog was not recorded there (and these included the three largest ones of all). Also, in the period studied, fog was twice as frequent with SE winds, which apparently favoured arrivals, as with E and NE, which did not, so at least part of its apparent influence might be attributable to the wind-direction. Total (8/8ths) cloud in the north-eastern North Sea evidently had no influence, being as frequent for big and moderate arrivals on the one hand as for small and negligible ones on the other. Half the big arrivals, including the biggest of all, occurred when neither fog nor total cloud was recorded round the north-eastern North Sea.

Round the southern North Sea, Table V shows that fog and total cloud were actually less frequent with big and moderate arrivals than with small and negligible ones; and half the big and moderate arrivals occurred on mornings when neither fog nor total cloud was recorded there. This strongly suggests that overcast in this area had no influence. But this is not certain, since, as shown in Table II, one of the two arrivals involving at least a thousand birds was associated with fog

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TABLE V—INFLUENCE OF FOG AND CLOUD ON CONTINENTAL ARRIVALS IN SETTLED WEATHER WITH EASTERLY WINDS THROUGHOUT THE NORTH SEA, BASED ON DATA FROM THREE BIRD OBSERVATORIES ON THE EAST COAST OF ENGLAND, 20TH AUGUST-10TH OCTOBER 1949-1959

	Number of days with arrivals of each size			
	Big	Moderate	Small and very small	Negligible
<i>Situation in north-eastern North Sea at 1800 hours or midnight</i>				
Fog in places	3½	4½	0½	2
8/8 cloud in places	4½	5½	8½	2
Clear or partly clear	8	4	7	13
<i>Situation in southern North Sea at 0600 hours</i>				
Fog in places	2½	3	4	5
8/8 cloud in places	4½	5	9	4
Clear or partly clear	9	6	3	8
Frontal rain	2	2	—	—

Fog or mist prevents examination of the cloud cover; therefore, when both fog and 8/8 cloud were recorded on the same occasion at different stations in the same area, each was scored as "½". The big movement on 1st October 1951 was classified as occurring with total cloud because there was total cloud after noon when the migrants arrived.

and the other with total cloud in the southern North Sea; it is hard to know how much weight to attach to this.

Frontal rain

Frontal rain was recorded on the English east coast on four of the 63 days analysed in this section, occurring on 2nd September 1956 and 21st September 1957 with big arrivals and on two other days with moderate ones. Since it is well established elsewhere that frontal rain may precipitate passing migrants, it presumably was a factor on the four occasions mentioned, but its overall influence was unimportant owing to its rarity in eastern England in the settled type of weather analysed here.

Conclusion

Although big and moderate arrivals were commonest with settled conditions and easterly winds throughout the North Sea, they occurred on slightly under half of the days with this type of weather. Nearly all big and most moderate arrivals took place with SE winds in at least part of the North Sea, and not with following NE winds; but the only variable with a significant positive influence on the number of arrivals in this type of weather was a strong cross-wind (between E

and SSE) in the southern North Sea. Fog in the north-eastern North Sea and fog or total cloud in the southern North Sea conceivably had some influence, but if so it was very subsidiary and many big and moderate arrivals occurred in their absence. Frontal rain on the English east coast very possibly had an influence when present, but it was rarely present.

ARRIVALS IN OTHER TYPES OF WEATHER

In Table III the weather was divided into 14 types, but in all of these except the first, treated in the previous section, big and moderate arrivals were too sparse to establish correlations with particular weather factors. Further, the figures for diverse types of weather cannot validly be grouped together for statistical comparisons. It is, however, important to appreciate that sizeable arrivals were by no means confined to settled weather with easterly winds. Hence those in other types of weather have been summarised in Appendix B, while points of special interest are discussed in the present section (in which roman numerals in brackets at the end of a sentence mean that further details can be found under that type of weather in Appendix B).

As shown by Table III and Appendix B, anticyclonic weather with easterly winds (type i) was much more favourable for arrivals than any of the other types of anticyclonic weather (ii-v). I at first ascribed this to the paramount importance of westward drift by easterly winds throughout the North Sea. However, while this presumably played a part, the details in Appendix B, together with the findings for wind-strength in the previous section and the radar evidence discussed later, strongly suggest that the biggest factor militating against large arrivals in the other types of anticyclonic weather was the accompanying very light wind in the southern North Sea (ii, iv, v); and that, under these conditions, migrants arrived in eastern England but did not alight in appreciable numbers at the coast. This explanation is tentative. Incidentally, it might explain why, with westerly winds throughout the North Sea, there were only negligible arrivals in calm anticyclonic weather (v), but at least two moderate and many small arrivals in windier transitional or disturbed weather (x, xiv).

As shown in Table II, there were only three big arrivals in other types of weather. One was in anticyclonic conditions with a light variable wind in the northern North Sea and an 11-knot south-easterly further south, so that the extent of westward drift was presumably small. Another was in anticyclonic weather with an easterly wind in the northern North Sea and a north-westerly further south, so that westward drift was presumably restricted to the first part of the night. (This might be classified as an instance of "cyclonic approach", discussed later.) The third was in transitional weather with extremely

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light easterly winds throughout the North Sea, so that westward drift was presumably negligible; it occurred on the first day of improving weather after an unusually long disturbed spell.

TABLE VI—CONTINENTAL ARRIVALS IN OTHER KINDS OF SETTLED AND FAIRLY SETTLED WEATHER (TYPES ii-vii IN TABLE III), BASED ON DATA FROM THREE BIRD OBSERVATORIES ON THE EAST COAST OF ENGLAND, 20TH AUGUST-10TH OCTOBER 1949-1959

	Number of days with arrivals of each type		
	Big and moderate	Small and very small	Negligible
<i>Conditions in north-eastern North Sea at midnight</i>			
<i>Wind</i>			
NE and E	4	5	9
SE and S	5	7	14
SW and W	—	1	9
NW and N	3	10	32
Light variable	4	3	5
<i>Overcast</i>			
Fog in places	2	4	10
Rain in places	—	1	2
8/8 cloud in places	10	10	28
None of these	4	11	29
<i>Conditions in southern North Sea at 0600 hours</i>			
<i>Wind</i>			
NE and E	4	12	22
SE and S	9	9	20
SW and W	2	5	13
NW and N	1	—	7
Light variable	—	—	7
<i>Overcast</i>			
Fog in places	3	9½	9
Rain in places	—	2½	7½
8/8 cloud in places	6	4	20½
None of these	7	10	32
<i>Mean speed in knots of winds between E and SSE 900 metres above Norfolk</i>			
	9 knots	14 knots	12 knots

As in Table V, when any two of fog, rain and 8/8 cloud were recorded on the same occasion at different stations in the same area, each was scored as "½". The total numbers of days on which the mean wind-speeds in this table are based are 11, 13 and 22 respectively (reading from left to right). This table should not be used for statistical comparisons, since diverse types of weather are grouped together.

For an overall conspectus, I have summarised in Table VI the arrivals in the other types of settled and fairly settled weather (*i.e.* in all other anticyclonic weather together with transitional weather with easterly winds, types ii-vii in Table III); but I would stress that comparisons based on the grouping of different types of weather must be highly tentative. As regards the wind in the north-eastern North Sea, the most suggestive point in Table VI is that there were negligible arrivals on nine of the ten nights with a west or south-west wind, and only a very small one on the other. This was probably because, though the weather was anticyclonic, migrants rarely set out from Scandinavia in autumn on warm nights (*cf.* Lack 1960c). The proportion of moderate arrivals with north-westerly winds was also very small, although as this is a cold direction many migrants probably left Scandinavia on such nights; the paucity of arrivals then was probably due mainly to the accompanying light winds in the southern North Sea, and on some occasions to eastward drift away from England (iv, v).

In the southern North Sea, big and moderate arrivals were slightly more than twice as frequent with south-easterly as north-easterly winds, supporting the trend found in settled easterly (type i) weather; there was also a big arrival with a north-westerly wind (already mentioned) and two moderate ones with an extremely light south-westerly, all with easterlies further north.

For the eleven big and moderate arrivals treated in Table VI in which the wind was between east and SSE in the southern North Sea, its mean speed above Norfolk was only 9 knots. Thus the correlation between big arrivals and strong winds found in settled easterly conditions was definitely absent in these other types of weather (though it was present for the big arrivals in late October summarised in Table VII). This presumably means that strong south-easterly winds are only one of the possible factors producing big arrivals, but what alternative factors might have been involved on the eleven days now under discussion is far from obvious.

As regards overcast in the north-eastern North Sea, no appreciable variations were found with fog; and, though the proportion of big and moderate arrivals was about twice as high on the nights with total cloud as on those without it, this is of doubtful importance. In the southern North Sea, fog again appeared to have no influence, while big and moderate arrivals were rather commoner with than without total cloud. As in settled easterly weather, quite a number of big and moderate arrivals occurred in the absence of full overcast.

The most striking point about the 16 days with big and moderate arrivals in Table VI is that they shared no weather factor in common, and that there seemed nothing distinctive about them. The same held for the moderate arrivals in more disturbed weather. It is likely that

two of the ten moderate arrivals listed in Table III for weather of types viii-xiv were really redetermined departures from England (see x, xiv), but the other eight were evidently from the Continent. One of them occurred in transitional weather with a south-easterly wind in the northern North Sea and a very light south-westerly in the southern North Sea (like two moderate arrivals in anticyclonic weather); and a second took place with similar wind-directions but more disturbed weather. Three more occurred in circumstances in which westward drift can be excluded, one in transitional weather with a light north-westerly throughout the North Sea and the others in disturbed conditions with a westerly or south-westerly throughout. The last three of the eight took place in what observatory workers have termed "cyclonic approach"—when a depression moves east across the North Sea during the night with an easterly wind to the north of it, and a north-westerly wind behind it next morning. The implication has been that, under these conditions, migrants reach England by flying down-wind round the depression, but the radar evidence cited later for a moderate arrival of this type on 8th September 1958 points strongly against this interpretation. (The 27 days with weather of this type are summarised under xii.)

Finally, in disturbed weather with westerly winds throughout the North Sea, there were not only two moderate arrivals, as already mentioned, but 25 small or very small ones that included typical Continental species. Most of the latter presumably came from the Continent on the preceding night, though a few might have been redetermined departures from England. In particular, disturbed weather with westerly winds prevailed from 20th August to 19th September 1957, and during this time there were no big or moderate Continental arrivals and no easterly winds. But between 29th August and 17th September there were seven small or very small arrivals that included such characteristic Continental migrants as Robins, Redstarts, Garden Warblers, Goldcrests and Pied Flycatchers, also a Red-breasted Flycatcher on 29th August and Barred Warblers on 8th and 13th September; since redetermined movements can be virtually excluded in this period, these birds presumably came from the Continent with westerly winds. Disturbed westerly weather is the commonest type in the North Sea in autumn and small Continental arrivals occurred on only about a tenth of the days concerned, but it is interesting that any at all should occur under such conditions.

ARRIVALS IN LATE OCTOBER

Because only Spurn was regularly manned after 10th October each year, I did not analyse what happened every day after that date, but considered only the big and moderate arrivals (predominantly of

AUTUMN "DRIFT-MIGRATION" ON EAST COAST

TABLE VII—BIG AND MODERATE ARRIVALS OF GOLDCRESTS (*Regulus regulus*) AND ROBINS (*Erithacus rubecula*) AT SPURN POINT, YORKSHIRE, LATE OCTOBER 1948-1959

	Number of days with arrivals of each type			
	North-eastern North Sea		Southern North Sea	
	Big	Moderate	Big	Moderate
<i>Wind-direction</i>				
NE	1	1	1	1
E	1	3	1	2
SE	2	3	3	3
S	1	—	—	—
W	—	—	—	1
<i>Overcast</i>				
Fog in places	—	—	—	—
8/8 cloud in places	1	5	1	7
Frontal rain	—	—	1	—
None of these	4	2	3	—

This table is based on big arrivals on 9th and 30th October in 1948, on 23rd in 1950, on 12th in 1951 and on 23rd in 1955; and on moderate arrivals on 29th October in 1948, on 30th in 1949, on 25th in 1950, on 27th in 1951, on 19th in 1952, on 15th in 1953 and on 16th in 1956. On the one occasion with a wind near to south in the northern North Sea it was probably somewhat east of south. The mean speed for all winds between east and south above Norfolk was 20 knots. A moderately large arrival of Goldcrests on 17th October 1959 was omitted as it was probably a redetermined movement; it occurred only a week after a huge arrival of the same species, on a day when there was a 30-knot SSW wind above Hemsby and when radar showed no movements out to sea.

(Goldcrests and Robins) at that one observatory during the rest of October. Including some figures for 1948, this provided five more big arrivals and seven more moderate ones, on the dates listed in the notes beneath Table VII. All twelve arrivals occurred in anticyclonic weather in southern Scandinavia, like almost all the big ones in Table II. Further, only three big and one moderate arrival were preceded by a spell of anticyclonic weather, one big and one moderate by disturbed weather, and the rest by mixed weather (in four of which the two immediately preceding days were anticyclonic); hence, as found earlier, the big arrivals were not correlated with a previous hold-up due to bad weather in Scandinavia.

The direction of the wind and the occurrence of overcast during these movements have been summarised in Table VII. The wind was south-easterly in at least part of the North Sea for nine of the twelve, as it was for nearly all the big and moderate arrivals in Table IV.

For one moderate arrival the wind was easterly throughout the North Sea, for another it was north-easterly throughout, and for a third it was south-easterly in the northern North Sea but light south-westerly in the southern part; for all of these there were parallels in the main period. For the nine mornings with an E to SSE wind, its mean speed at 900 metres above Norfolk was 20 knots, the same figure as for the big and moderate arrivals in Table IV. This makes it the more curious that the big and moderate arrivals in Table VI were associated with very light winds. When the figures used in Tables IV, VI and VII are combined, the average speed above Norfolk of winds between east and SSE was 17 knots for 22 big arrivals, 17 knots for 23 moderate arrivals, 12 knots for 25 small and very small ones and 12 knots for 34 negligible ones. Hence the average difference between big and negligible arrivals was only 5 knots, which might mean that the strength of the wind had no real influence, but more probably means that a strong south-easterly wind is only one of the possible factors resulting in big arrivals.

The arrival on 23rd October 1955 was the only big one recorded in this paper with a north-easterly wind throughout the North Sea. It was seen at all three observatories and, in addition to Goldcrests and Robins, it included many thrushes. It occurred with heavy frontal rain on the English east coast and this presumably precipitated many migrants that would otherwise, with the following wind, have proceeded inland without alighting.

During none of the twelve arrivals was fog recorded at either end of the North Sea and, in addition, most of the big ones took place at times when there was not total cloud. Total cloud was recorded at both ends of the North Sea for most of the moderate arrivals.

(To be concluded)

The past status of the Brent Goose

By G. L. Atkinson-Willes and G. V. T. Matthews

THIS PAPER CONCERNS the use of extracts from the British literature to obtain historical estimates of the numbers of the Dark-breasted and Pale-breasted Brent Geese (*Branta bernicla bernicla* and *brota*). Salomonsen (1958) stated that "the number of Dark-breasted Brents wintering in Europe in the latter half of the 19th century must have amounted to about 216,000 birds. The total population, including both Pale- and Dark-breasted birds, now amounting to 26,500 birds, must have been 350,000 birds." The conclusion that there has been a catastrophic decline in the numbers of this species in

Europe during the present century has been sharply criticised in many quarters, especially by the Wildfowlers' Association of Great Britain and Ireland (W.A.G.B.I.). Salomonsen's calculations are based on his interpretation of a series of extracts from the British literature prepared by one of us (G.L.A.-W.) in 1953 for the Wildfowl Inquiry Committee, and passed to Salomonsen at the request of the Committee's successor, the International Wildfowl Research Bureau. Since we arrived at a different interpretation of these same data, and one with which the representatives of W.A.G.B.I. are in general agreement, it was felt to be worth publishing our conclusions in view of decisions that will have to be made on the protection of this species in the fairly near future.

Salomonsen's conclusion was reached by estimating the decrease in wintering populations "using figures for such (British) counties only in which average estimates are available for all three periods in question." The counties selected are not specified but inspection of Salomonsen's Table III and comparison with his summary in the text indicates that the figures used for the average sizes of the winter populations were:

	1875-1900	1920-1935	1948-1956
Moray	10,000	4,000	—
Northumberland	6,000	5,000	1,000
Hampshire	1,000	300	200
Clyde	1,000	500	—
Forth	500	300	—
Yorkshire	500	100	50
Dev, Tay, Durham, Kent	650	550	220
Dorset, Devon, Cornwall, Somerset, Lancashire	570	260	85
	20,220	11,010	1,555

He then states that "the recent population constitutes a small fraction—arithmetically a mere 7.66 per Cent—of that present 50-75 years ago. This heavy decrease no doubt holds good of all populations." Hence he assumes that the present European population of 26,500 is 7.66% of that in 1875-1900, which would thus have been 350,000.

Now, these "averages" are apparently derived either by taking the highest figure in a range as the average ("<500" for Yorkshire in Table III becomes an "average" of 500) or by halving it (250-12,000, 5-10,000, 0-2,000 for Northumberland in Table III become "averages" of 6,000, 5,000 and 1,000).

Moreover, it is quite wrong to assume that a decline in the goose population of one area is *necessarily* associated with similar declines over the whole range. Indeed many instances to the contrary could

be cited. It is particularly unfortunate that half the 1875-1900 sample is derived from Moray where the population may well have been finally driven away by bombing disturbance. Contrariwise, the sample excludes those areas (Wash and Essex) where more than two-thirds of our wintering Brent are *now* found. The sample is thus inevitably weighted towards producing an apparent radical diminution in the population.

But the fundamental error is to attempt to deduce *average* winter populations from historical data. Brent Geese are particularly prone to hard weather movements and are hence very erratic in their appearances. Even when regular counts are available, the average of figures ranging from 250 to 12,000 has no statistical value. The Northumberland data for 1875-1900 had just such a range, but while 12,000 was recorded twice no other year was credited with more than 1,000—except 1886 with 30,000. Salomonsen apparently overlooked the last figure; otherwise, if it had been introduced into his calculations, he would presumably have concluded that the 19th century European population was 500,000, instead of 350,000.

In the historical literature only the extremes in population fluctuations will have been recorded, a point stressed by Parish (1953). Moreover, the records will have value as a census only when the bulk of the population is concentrated in that part of the range which is covered by observers.

Early records from Ireland are so limited that no useful comparisons can be made, while the west coasts of Britain have never carried many Brent. Our south and east coasts are tolerably well served by county histories and other local publications and years marked by large influxes (those in which hard spells of winter weather have occurred) are unlikely to have escaped the records. In the hundred years before systematic wildfowl counts were attempted there are 17 such years. The counties in which influxes occurred are listed below. Since most references are mere collections of superlatives, only those giving some numerical basis are identified in detail. The full set of abstracts, covering some 150 titles, is deposited at the Wildfowl Trust.

1866/67	Moray
1870/71	Suffolk; Essex
1871/72	Suffolk; Essex; Devon
1877/78	Northumberland
1878/79	Northumberland (10-12,000, Chapman 1907); Durham; Suffolk; Essex; Sussex; Dorset
1880/81	Moray; Northumberland (10-12,000, Chapman 1907); Yorkshire; Norfolk
1885/86	Northumberland (30,000, Chapman 1889); Durham
1890/91	Moray; Yorkshire; Kent (many thousand, Ticehurst 1909); Hampshire; Devon; Cornwall

1895/96	Kent
1909/10	Moray (more than 2,000 shot, Berry 1939)
1911/12	Northumberland; Durham
1916/17	Northumberland (10,000, Chapman 1924); Yorkshire
1917/18	Northumberland (10,000, Chapman 1924)
1921/22	Northumberland (thousands, Chapman 1924)
1928/29	Forth; Yorkshire; Norfolk; Essex (thousands, Wentworth Day 1949); Hampshire; Dorset
1939/40	Kent
1946/47	Northumberland (5,000, G. W. Temperley <i>in litt.</i>); Norfolk (1,000, Wentworth Day 1949); Essex (15,000, Wentworth Day 1949); Hampshire (700, Luckham 1947)

Running through the literature is the repeated refrain that the large numbers present were unusual. Hawker's (1893) phrase "grand army" has been often quoted to suggest enormous numbers, but he (writing about an earlier period, 1802-1853) never saw more than 2,000 Brent in Hampshire and was able to use the very same expression in such a sentence as "The grand army of the geese had increased to 300". Another statement that has been given exaggerated interpretation is Chapman's "it was not uncommon to see 10-12,000 Brent in a single harbour." Often this is taken to mean that there were other harbours with similar numbers. But elsewhere Chapman writes "and this in a single harbour where there had not been over 4-500 geese all winter." He is clearly referring only to the harbour (Holy Island) with which he was familiar.

Descriptions such as "almost covering Findhorn Bay" (Harvie Brown 1895) or "sufficiently large to cover a ten acre field" (Russell, in Miller Christy 1890) can mean almost anything depending on the density of the flocks. Nor can much reliance be placed on Wentworth Day's estimate of 15,000 in 1947 since he writes (1949, p. 17) that this was "the biggest gathering I have ever seen in my life" and yet in the same book (p. 157) remarks that "I have seen as many as 25,000 gathered together . . ."

It is to Chapman that we must turn to obtain anything in the nature of reliable numerical estimates. His evidence, generally considered acceptable by wildfowlers and naturalists alike, is mainly confined to Holy Island, Northumberland. Here on 3rd March 1886 he saw "not less than 30,000" Brent Geese. That year the only other report of large numbers came from Durham and could well have referred to the passage of the same influx. In 1879 and 1881, when Chapman saw only 10-12,000 Brent at Holy Island, reports of unusual numbers came from respectively two and three quite distinct areas. So there is no evidence that there was any difference in the total influx. (The lack of other reports in 1917 and 1918 when Chapman again saw 10,000 may well have been due to war conditions.)

Since systematic wildfowl counts started in this country there have

been two hard winters. The late January and early February counts, covering all the Brent haunts, gave 7,000 in 1954 and 11,000 in 1956. As well as the cold weather influx these totals contain the birds normally overwintering here. This component was lacking in Chapman's 30,000 and, as we have already said, cannot be derived from the literature. But if some sort of figure must be put down, it is probably fair to say that in hard winters we are nowadays receiving something like a quarter of the Brent that would have arrived during the latter part of the 19th century.

This is a serious decline, but it is not the catastrophic collapse suggested by Salomonsen's figure of 7.66% (with its misleading claim of accuracy to one part in 10,000).

We would prefer not to attempt to extrapolate from these British data to any precise figure for the total 19th century European population of Brent. Apart from thereby having to assume that a similar decline took place over the whole area, we are by no means certain that a similar *proportion* of the European population came to Britain then as now. One of the impressions gained from the literature is that Light-bellied Brent made up the bulk of the big irregular influxes—to Moray, to Holy Island and even to Sussex—in the 19th century. The implication is that these birds, rather than the Dark-bellied, may have suffered the most severe decline. Nowadays we may expect to receive about half the European-bred birds, including all the Light-bellied birds from Denmark, in cold weather. If the same pattern was prevalent in the 19th century the influxes would have included more Light-bellied birds and therefore represented an even higher proportion of the European population, say as much as two-thirds.

It is in connection with the Spitsbergen population of Light-bellied Brent migrating up the Norwegian coast that Salomonsen brings out his only substantiation of the vast numbers he derives from his interpretation of the British data. Of a report by Holm he writes, "This may be an exaggeration, but even if we cut his figures down to five days with 50 flocks, each numbering on an average 100 birds, we get a total of 250,000 individuals." But $5 \times 50 \times 100 = 25,000$.

Finally, where could two-thirds of a 268,000 European-bred population have been accommodated in hard weather, on our south and east coasts (assuming 82,000 Light-bellied Brent from Greenland went to Ireland)? To cope with about 180,000 birds, not only Holy Island but also Moray, Essex and the Wash would have had to take 30,000 birds each, with groups of 10,000 each finding refuge in the Humber, in the Forth/Tay area, in Kent and in Hampshire; and all of this *simultaneously*. There is no trace in the literature of any such deluge in the 19th century.

Salomonsen's stated impression that shooting is the main cause of

decline may be correct, but the evidence is far from concrete. It is certainly unfortunate that he should have laid the main responsibility at the door of the British wildfowlers, because they were apparently the only people to record their activities during the 19th century.

While we have been critical of Salomonsen's handling of the historical records, we should, in fairness, point out that his discussion of these forms only part of a long paper in which useful light is thrown on the present day numbers, distribution and migrations of Brent Geese. These aspects have been reviewed at length by Boyd (1959).

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Notes

Attempted coition by Little Stints on autumn passage.—At Radipole Lake, Weymouth, Dorset, on 4th October 1957, I became very interested in the behaviour of two Little Stints (*Calidris minuta*). One was making short runs or low level flights across a shallow mud bank and then endeavouring to alight on the back of its companion, keeping up a distinctive trilling all the time. The other, by quickly turning sideways, would usually succeed in preventing this and then, in turn, with wings almost fully extended and head and neck thrust forward, would chase and drive away the first bird, also trilling as it did so. However, on three occasions during the fifteen minutes I spent watching them the one which I took to be a male managed to keep its balance on the back of the other, though I do not think coition actually took place. Mr. K. D. Smith informs me that he occasionally saw Little Stints courting in the early months of the year in Eritrea, the presumed males trilling and driving off other species from the females, but that he never witnessed any attempt at coition.

BERNARD KING

Great Spotted Cuckoo in Anglesey.—On 3rd April 1960 a Great Spotted Cuckoo (*Clamator glandarius*) was found at Pen-lon marsh, Newborough, Anglesey, by F. Walton, J. Walton, L. M. Walton, P. Walton, B. Stonebridge and myself. We watched it for two hours and were joined by L. S. V. Venables, U. M. Venables and C. F. Tunnicliffe. It remained in the area for at least twelve days, during which time it was seen by a very large number of observers. The last definite date we have for it is 15th April when it was seen by J. P. Wilkinson.

We first found it hopping around in drizzling rain on clumps of grass and on ridges in the marsh. The weather soon cleared and we got within 10 yards of it on several occasions; it was very approachable and made no effort to fly away, simply moving about by hops and small flights of several yards. It became alarmed only when the bells of a church near-by began to ring. We were able to note the following description:

Upper-parts: crown light blue with dark lines; noticeable crest; nape very dark; back and rump dark. *Wings and tail:* wings dark sepia with pale markings on the coverts and three indefinite wing bars; tail dark and very long with white tips to most of the feathers and also white patches at the bases of the outer ones. *Sides of head and under-parts:* throat and sides of face yellow-white; dark patch running through eye; breast and belly off-white; under-tail coverts white. *Soft parts:* legs, bill and eye all dark.

Although the bird had a blue-grey crest, which it raised continuously, there was a good deal of rich chestnut in the wing in flight and so it was thought that it might be in first-summer plumage. When it did fly any distance its action was strong and direct and its general appearance was very reminiscent of that of a Cuckoo (*Cuculus canorus*). On 3rd April it was frequently seen to take worms, but on the 7th P. H. G. Wolstenholme and the Venables found it feeding voraciously on blackish caterpillars which it picked out of grass tufts; a short search then of one place where it had been feeding produced six caterpillars which were subsequently identified as those of the Drinker Moth.

G. F. WALTON

Redwings breeding in Ross-shire.—On 12th June 1960 I visited the locality in Ross-shire where at least two pairs of Redwings (*Turdus musicus*) had successfully nested in the previous year (*Brit. Birds*, 52: 315). Local people, who had become familiar with the birds in 1959, told me that several Redwings had been seen and heard singing during May 1960 and that one pair had hatched and reared a brood of young which had already flown. I was shown the nest which was in a rhododendron bush close to the house.

I then found a brood of five young Redwings in a nest about ten feet up in a creeper on the north side of the house. This may have been a second brood of the pair which nested in the rhododendron or it may have belonged to a different pair altogether. The nest was actually that of a Song Thrush (*T. philomelos*), to which some grass lining had been added. Both the adult Redwings were regularly seen feeding the young. I ringed the latter on 20th June and they flew on the 25th.

I also visited the actual breeding sites of 1959. The birch tree which had been occupied then again contained a Redwing's nest. It was a typical structure, newly built this year, and had obviously held young recently.

E. G. HOLT

Leg coloration of Reed Warblers.—The leg coloration of the Reed Warbler (*Acrocephalus scirpaceus*) is described in *The Handbook* as brown, and in *A Field Guide to the Birds of Britain and Europe* as dark brown. When trapping Reed Warblers at Fordingbridge, Hampshire, in July 1958, however, I was impressed by the number of those whose legs were tinged with shades of blue or grey and so I began to note down the colour in every bird. In all, a total of 21 (16 adults and five juveniles) was examined in this way between 12th and 15th July 1958. The following descriptions are necessarily subjective, but they do indicate that, at least at that time of the year, a large proportion of Reed Warblers have legs coloured differently from what is usually given in the reference books:

Adults

Horn with lavender tinge (2)	Brown with faint grey tinge
Greyish-blue with flesh tinge	Greyish-brown
Pale brown with greyish tinge	Dark greyish-brown
Pale brown with grey tinge	Pale grey
Pale brown with bluish tinge	Pale brown (3)
Pale brown with lavender tinge (2)	Dark flesh

Juveniles

Dull horn	Pale brown with slight grey tinge
Bluish-grey with flesh tinge	Pale lead-grey
Grey-blue	

Thus, unless the legs of this species change colour markedly with the season, it would be better to describe them as "flesh-coloured or brown, usually tinged with some shade of grey or blue". Incidentally, I looked at a number of Reed Warblers in the field at this time and in many cases bluish tinges were clearly visible through binoculars.

J. S. ASH

Reviews

The Bird in the Hand. By R. K. Cornwallis and A. E. Smith. British Trust for Ornithology, Oxford, 1960. 69 pages. 4s. (Obtainable from the B.T.O., 2 King Edward Street, Oxford, at 4s. 6d. including postage.)

At last the bird-ringer has available the type of guide for which he has been waiting. In my opinion this extremely reasonably priced booklet, published by the British Trust for Ornithology as Field Guide Number Six, will do as much to improve the standards of identification of the bird in the hand as the *Field Guide* has done to improve those in the field.

The booklet is divided into four parts, the first of which is headed "Handling". This deals with methods of holding birds for ringing and examination, with ways of extracting them from cage traps and nets, with keeping and releasing trapped birds, with the treatment of sick and injured ones and with the disposal of dead ones. The second is concerned with ringing, and contains sections on how to use metal and plastic rings and on the bird-ringer's position in relation to the law. Besides dealing adequately with all these subjects, the authors warn against the possible pitfalls and give much advice on correct procedure. If such a code of safety and good behaviour is maintained and continued by bird-ringers, they can have nothing to fear from outside criticism.

The third part contains valuable sections on the topography of a bird, the colours of plumage and soft parts, weighing, deparasitising, measuring, wing-formulae, moult and record-keeping. Necessary stress is laid on the importance of the standardisation of methods of recording this sort of information. In the section concerned with measuring it might have been pointed out that the measurement of the tail is always from or to the tip of the longest feather, and that of the tarsus from the angle at the *back* of the "knee" joint.

Many readers will find the cream at the bottom, in the fourth part. On 28 pages it deals with the important characters in sexing and ageing 54 species and one subspecies that are frequently handled by bird-ringers. This part is printed in a most accessible and readable manner, generously interleaved with blank pages for additional notes, and conveniently cross-referenced with the numbers from the *Check-list of the Birds of Great Britain and Ireland* and the relevant volume and page in *The Handbook of British Birds*. It is emphasised that this section is only a guide, and that there is still much to learn. This is true, of course, but nevertheless all ringers will find it invaluable for the determination of sex and age, and there will no longer be any excuse for

submitting ringing schedules with a long column of "f.g." on every page!

The few criticisms I have are only very minor ones. For instance, I had difficulty with the Kestrel key when trying to identify a skin, and I am sure from experience that it would have helped many ringers if it had been pointed out that summer-trapped adult female Chaffinches and House Sparrows are easily separated from juveniles by their abraded plumage. Also, anyone attempting to determine a single *alba* wagtail is going to meet with difficulty, and I feel that it would have been more helpful if this species had been treated in the form of a key with the characters to sex and age in the left-hand column.

Finally, I should like to say that if this publication sets the standard for the promised future guides on certain difficult genera, then these can be looked forward to with eager anticipation. No British—or for that matter European—bird-ringer or observatory worker can afford to be without it.

J.S.A.

The House by the Shore. By Eric Ennion. Routledge and Kegan Paul, London, 1960. xv and 200 pages; 16 photographs and numerous black-and-white drawings. 28s.

This book, engagingly written and lavishly illustrated, tells how a country doctor and his wife founded the famous bird observatory at Monks' House, Northumberland, in 1950. But Eric Ennion was no ordinary general practitioner. Naturalist, artist and individualist, he had given up his practice in 1945 to start the pioneer Field Centre at Flatford Mill in Suffolk, and when this was triumphantly established he began to look for somewhere smaller, more suitable for migration studies, free from committee control and appealing to artists as well as to naturalists. After investigating many places in East Anglia and on the south coast, he heard by chance of a grey stone house on the Northumberland shore, close to the Farnes and Holy Island, and shortly afterwards the eighth of our bird observatories, a vital link in the coastal chain, was born.

Dr. Ennion describes the early struggles to furnish and equip it, the rewards and headaches of running an observatory, the wild life of the district and the many different types of people who come to watch and study. In perhaps the most valuable chapters in the book, he draws on a wealth of personal experience to discuss the practical problems to be met—the many kinds of traps used, their construction and operation, advantages and drawbacks; the handling and ringing of birds, the art of nest-finding and the care of the casualties brought in for attention. Though advice on these matters can be found elsewhere, here is a practical guide in one volume, illuminated by anecdotes

and generously illustrated with his delightful sketches. No enthusiast can fail to learn something from such a field expert.

At Monks' House the shore, with its constantly changing pattern of bird life and always the hope of a rarity appearing, is the main attraction, but there are many other fascinating places within reach, and the book concludes with accounts of these—Holy Island, the Farnes, the still unspoiled Cheviots, the Breamish valley where important ecological surveys have been made, and even forays across the Border to the Bass Rock. Dr. Ennion has clearly found the job which satisfies his diversely talented personality, and he communicates his delight most infectiously to the reader. S.C.

The Popular Handbook of Rarer British Birds. By P. A. D. Hollom. Witherby, London, 1960. xiv and 134 pages; 39 colour plates and one in black-and-white; text-figures. 37s. 6d.

This work is expressly complementary to *The Popular Handbook of British Birds* and deals with the birds which were adjudged too rare for inclusion in it, together with others whose first appearance is so recent that they were not then, and in some cases are not even now, admitted to the British list. The treatment of each species is similar to that in the original book, with an initial paragraph on field-characters, followed by short sections headed "Habitat", "General Habits", "Food" and "Status and Distribution". All the birds included are figured in colour.

Strictly within these limits, the work will be a most welcome addition to the library of every amateur ornithologist who will now have in two volumes a condensed account, almost completely up-to-date, of all the birds known to have occurred, not only in Great Britain but also in her sister island. (Several of the species covered are as yet unrecorded on this side of the Irish Sea.)

Perhaps a better title would have included the superlative term since most of the birds in the present work have occurred less than a dozen times. In a good number of cases, wherein identification calls for the comparative study of two closely related species, it will be necessary to refer to both "Popular Handbooks". It is fortunate that practically all the birds which have been admitted since the publication of *The Handbook* do not fall into this category, being well defined species of remote origin for whose recognition the present account will serve in some measure until the parent work is rewritten.

There is no doubt that we are at present enjoying an enhanced body of interest in bird-watching which is adding considerably to the numbers of sight records of the rare species. This has several consequences, not the least of which is the abrogation of the rule still applying in most other countries by which a species cannot be admitted

to the national list in the absence of an accredited specimen. This is not pre-eminently a humane requisite so much as an acknowledgement of the fact that practically all first sightings are now likely to be made by people with neither the wish nor the facility to collect them, in such circumstances as may leave no doubt as to the identity of the species concerned. It is obvious that this is a situation not without difficulty since for every hard and fast case there must be many when the degree of proof will need to be assessed and divested of any doubt before the record can be accepted. Fortunately the camera can be a vital aid. It is interesting to note that the only Western Sandpiper (*Calidris mauri*) was in fact first recorded as a Semi-palmated Sandpiper before what is now considered to be its true identity was recognised.

Those familiar with the literature will soon notice that a large number of early records of many species are no longer included. It has for many years been realised that a miasma of doubt hung around a morass of rarities which were alleged to have occurred in south-east England in the first two decades of the century and the author has wisely omitted all which derive from a particular source. In consequence, some species which had hitherto been supported by a specimen now find no place in the list while others are included because they have subsequently been seen or found dead in circumstances which indicate their retention. Thus the Terek Sandpiper is now recorded as having occurred only thrice, every one subsequent to the publication of *The Handbook*. In most cases the degree of proof is entirely satisfactory, though I confess to misgivings with regard to the Brown Flycatcher; this now remains on the list by virtue of a single sight record, which it is my personal opinion would not have been found acceptable by a committee such as is at present responsible to this journal for the critical acceptance of records of rare birds.

I note that although the Rufous Warbler is alternatively styled the Rufous Bush Robin after Vaurie, the same author's assessments of racial validity are not always followed. For example, the race of the Arctic Warbler occurring in this country is more likely to be *Ph. borealis talovka* than the typical form.

The plates are reproduced from *The Handbook* except in those species which are new to the list. These are beautifully figured, all but one of them by D. M. Reid-Henry who contrives to make the maximum use of limited space and to posture his bird so that critical parts of its plumage are displayed to best effect; the last new painting is of the Baikal Teal by Peter Scott.

It becomes increasingly obvious that the avifaunal list of any area directly reflects the number of critical observers who sustain it and the greatest tribute one can pay to a work of this sort is to say that it will soon be out-of-date. I am sure that it will. A.H.

The Mystery of the Flamingos. By Leslie Brown. *Country Life*, London, 1959. 116 pages; 32 photographs and two maps. 25s.

This book should be compulsory reading for anyone who imagines that the age of adventure is dead in ornithology or that no major mysteries remain. It is as absorbing as a good detective story and, indeed, it was only by the use of the imagination, skill and doggedness of a sleuth that Leslie Brown reached his solution.

The mystery was the location in East Africa of the breeding places of *Phoenicopterus ruber* and *Phoeniconaias minor*, the Greater and Lesser Flamingos. The spectacle of "countless" numbers of these birds on the alkaline lakes of the Great Rift Valley in Kenya and Tanganyika has often been described by travellers and naturalists. It is likely that there are as many flamingos here as in the rest of the world put together; according to Mr. Brown the numbers are in the order of three million Lesser and at least fifty thousand Greater. Yet, despite these vast flocks and the relative accessibility of the lakes (the edge of the Rift Valley is only some twenty miles from Nairobi), practically nothing was known of the habits of the birds or even whether they bred in the Valley at all. There were a few old reports of the sighting of nests and eggs—Colonel Meinertzhagen had flamingo eggs for breakfast by Lake Nakuru in 1903—but flamingos are notoriously liable to desert and no one seemed to have clinched the matter by the discovery of downy young. European settlers who lived by the lakes had noted nests, but had never seen them used. The local tribesmen asserted that the birds did not lay eggs at all but produced their young far out in the water and that the young appeared only when they were fully grown and capable of flight.

This, briefly, was the state of knowledge of the breeding of flamingos in East Africa as late as 1953 when Leslie Brown, who was working in the Kenya Department of Agriculture, decided that the time had come to unravel the mystery. Ever since then, he has spent most of his leisure studying flamingos. Those who hoard the once-in-a-lifetime memory of a few thousand flamingos in the Camargue may well think with envy of the opportunity to enjoy, and study intensively, half a million or so every weekend. But conditions in the Rift Valley are no picnic: the ground temperature can reach 150° F., the valley floor is often rough volcanic rubble or fine dust, there is practically no water suitable for drinking and there are millions of malarial mosquitoes. Many of the lakes are largely crusted with crystalline soda interspersed with patches of foul and evil-smelling green algal fluid. Mr. Brown describes the difficulties, frustrations and dangers of the early days of his search modestly, without sensationalism but with a proper atmosphere of suspense, building up to the climax when

he first chartered an aeroplane and then learnt to fly himself in order to explore the more inaccessible regions.

It was from the air, in August 1954, that he discovered one of the main breeding grounds of the Lesser Flamingo, a colony of at least fifty thousand nests, at the tip of a vast tongue of soda mud in the middle of Lake Natron. Mirage made the colony invisible from the shore (and probably accounts for the tribal legend) but the indomitable Mr. Brown attempted to reach it on foot a few weeks later. He was defeated by the stinking, glutinous mud, nearly lost his life and suffered very severe burns from the soda crystals. Undeterred by weeks in hospital and skin grafts, he continued to explore the Rift Valley. In 1956 he discovered a colony of nearly five thousand pairs of Greater Flamingos on Lake Elmenteita, and in 1957/58 he established from the air that around 570,000 pairs of Lesser Flamingos were breeding on Lake Natron—by far the largest flamingo colony in the world.

The Mystery of the Flamingos is in the best tradition of ornithological literature (as distinct from writings about birds); besides the well-written account of the discovery of the colonies, it contains much completely new information on the feeding habits, moult and breeding biology of both species. It is well illustrated with Leslie Brown's own excellent photographs though, unfortunately, the lack of colour means that these fail to convey the extraordinary beauty of the birds and the setting. The outstanding film made by Mr. Brown gives a better impression, but the only way to visualise and enjoy the fantastic spectacle to the full is to accept Mr. Brown's advice to "go and see it for yourself; it is worth the air fare".

E.R.P.

Letters

Migrations of the Oystercatcher

Sirs,—May I reply briefly to Mr. E. J. M. Buxton's recent letter (*Brit. Birds*, 53: 236-237) on the migrations of the Oystercatcher (*Haematopus ostralegus*)? It is a somewhat extravagantly worded communication, but I do not understand him to query the proposition that any proper study of Oystercatcher movements must take into account the fact that different breeding populations favour different winter quarters and consequently cover widely differing distances on their way there.

The only part of his letter that calls for further comment is, accordingly, the third paragraph. In this he criticises my treatment of the available evidence when I conclude that it does not support his suggestion that immature Oystercatchers move further away from their breeding areas than mature birds. His criticism is that one cannot say that a ringed bird recovered in December or January has

reached its "furthest south". This criticism conveniently ignores the only relevant ringing recoveries which unanimously suggest that, outside the breeding and migration seasons, Oystercatchers do not indulge in more than local movements:

Date and place of ringing		Date and place of recovery		Miles
21.9.52	Hilbre Is. (Cheshire)	13.3.53	Other side of Dee (Flint)	15
27.10.54	Isle of May (Fife)	12.4.55	Crail (Fife)	6
30.9.56	Shellness (Kent)	27.1.57	Shellness (Kent)	0
8.12.56	Conway (Caernarvon)	29.12.56	Deganwy (Caernarvon)	1
8.12.56	Conway (Caernarvon)	29.12.56	Llandudno (Caernarvon)	3

Curiously enough, Buxton specifically mentions the first two of these recoveries in his original paper (*Brit. Birds*, 50: 522). The recent Morocco recovery mentioned in his letter has, of course, nothing to do with the case. This bird could perfectly well have accomplished the trip very shortly after fledging, as witness the Fair Isle one that got as far as France in its first August.

D. G. ANDREW

Grebes in Africa

Sirs,—I read in *British Birds* (53: 78) that the Black-necked Grebe (*Podiceps caspicus*) "is the only one of the five Palaearctic grebes to be found" in Africa. In the interests of accuracy it should perhaps be pointed out that both the Great Crested Grebe (*P. cristatus*) and the Little Grebe (*P. ruficollis*) also breed in Africa south of the Sahara.

M. F. M. MEIKLEJOHN

[This was an unfortunate error on my part. In self-defence I may perhaps be allowed to draw attention to the first paragraph of another text I wrote three years earlier (*Brit. Birds*, 50: 23).—I. J. F.-L.]

Recent reports and news

By I. J. Ferguson-Lees and Kenneth Williamson

The items here are largely unchecked reports, and must not be regarded as authenticated records. They are selected, on the present writers' judgment alone, from sources generally found to be reliable. Observers' names are usually omitted for reasons of space and in case a report is subsequently rejected, and none of the items will be mentioned in our annual Index. Readers are asked to submit anything of interest as quickly as possible.

This summary includes a few reports for the period from late April to early June, which were received too late for inclusion in either of the previous ones (pp. 278-280 and 316-320); it should therefore be read in conjunction with those. At the same time it continues the story for the second half of June and the first half of July.

THE RARER BIRDS

The most remarkable addition to be made to the list of spring vagrants is a Rufous Turtle Dove (*Streptopelia orientalis*) which was well seen at St. Agnes (Isles of Scilly) on 2nd, 3rd and 6th May; there are only two previous records of this Asian species in the British Isles. Three Great Reed Warblers (*Acrocephalus arundinaceus*) were mentioned last month and, of those, the Cornish bird remained until 7th June;

In addition, there was one near Thatcham (Berkshire) on 1st and 2nd June and another in Kent at the end of May. A Short-toed Lark (*Calandrella cinerea*) on Fair Isle in June has already been reported (p. 318) and we now learn that about that time, actually from the 8th to 16th, another frequented an area near the River Colne on Staines Moor (Middlesex). Gull-billed Terns (*Gelochelidon nilotica*) continued to be reported (cf. pp. 278 and 317): one was identified over flooded meadows near Deal (Kent) on 10th June and later the same day it or another was seen flying off the sea-front of the town; on 11th and 16th June one was noted at Reculver (Kent); on 2nd July there was one at Langney Point (Sussex); and on 3rd and 16th July Selsey Bill (Sussex) again entered the picture with one and two respectively, thus bringing to eight the number of observations there this year. Langney Point also produced the only new report of a Mediterranean Black-headed Gull (*Larus melanocephalus*), an immature on 16th June. There was a Roller (*Coracias garrulus*) near Acle (Norfolk) on 4th June and another a week later, on the 11th, between Snape and Orford (Suffolk). A Little Bustard (*Otis tetrax*) appeared in the same general part of Suffolk, at Orford Ness, on 20th June. A first-summer male Red-footed Falcon (*Falco vespertinus*) was watched closely, both in flight and perched, near Deal (Kent) on 6th July; observations of this species in Norfolk, Dorset and Hampshire in May were listed last month (p. 317). There was a male Red-headed Bunting (*Emberiza bruniceps*), as usual open to the suspicion of being an escape, near New Hartley (Northumberland) from 15th to 17th June. An adult Night Heron (*Nycticorax nycticorax*) was identified near Wroxham (Norfolk) on 12th June, and a White Stork (*Ciconia ciconia*) flying north over Farcham (Hampshire) on 13th.

Less rare species in parts of the country where they are not usually found included an Avocet (*Recurvirostra avosetta*) at Teesmouth (Co. Durham) for some days from 1st May (with a second bird on the 24th) and a Kentish Plover (*Charadrius alexandrinus*) between Minehead and Dunster (Somerset) on 8th July. A Red-necked Phalarope (*Phalaropus lobatus*) stayed for some time from 25th June on a village pond at Great Baldon, near Oxford. As usual, most reports of Spoonbills (*Platalea leucorodia*) were from the east and south-east coasts, but an adult was seen near West Huntspill (Somerset) on 25th June.

OUT-OF-SEASON WANDERERS AND THE RETURN MIGRATION

Northumberland was provided with two curious records of birds far south of their normal summer range by the appearance of a Little Auk (*Plautus alle*) in breeding plumage at Monks' House, Seahouses, on 26th June and of eight Whooper Swans (*cygnus cygnus*) on the river at Cornhill-on-Tweed on 3rd July. Another unusual southward wanderer was a Swedish-ringed Black Guillemot (*Cepphus grylle*) which was found exhausted at Winterton (Norfolk) on 16th July. For twenty years Little Gulls (*Larus minutus*) have been regular autumn-to-spring residents on parts of the coasts of Angus and Fife (see, e.g., H. Boase, *Brit. Birds*, 47: 170-172), but this summer a number of first-year birds apparently stayed right through: 19 were seen on 6th June and 31 (with one full adult) on 2nd July. A late Firecrest (*Regulus ignicapillus*) was reported from Pembrokeshire last month (p. 318) and in this connection we should perhaps mention one at Dungeness (Kent) on 10th May. We should also like to take this opportunity of correcting an erroneous reference in our last summary to Lapland Buntings (*Calcarius lapponicus*) at Spurn (Yorkshire) in three days in May (p. 320): this entry was the result of a mistake in transcription and the three dates actually referred to Marsh Harriers (*Circus aeruginosus*)!

From a number of areas in different parts of the country there came reports of a turn passage of waders, and also of terns and ducks, from the second half of June onwards. Most of these concerned the east coast from south-east Scotland down to Kent, but there were also observations from the west and inland. The first reports came during 17th-19th June and the movement seems to have gathered

momentum in the last week, particularly from about the 26th. The waders involved included Green Sandpipers (*Tringa ochropus*), a few Wood Sandpipers (*T. glareola*), odd Spotted Redshanks (*T. erythropus*) and Greenshanks (*T. nebularia*), a number of Ruffs (*Philomachus pugnax*) and even one or two Little Stints (*Calidris minuta*), as well as commoner species. A Spotted Redshank near Margam Abbey (Glamorgan) is perhaps worth singling out as this species is rare in south Wales. These late June waders are not, of course, so very unusual, but the reports this year seem to have been rather earlier and more widespread. A large-scale movement of Lapwings (*Vanellus vanellus*) was also noted by a number of observers in Kent, Surrey, Middlesex and Buckinghamshire in the second half of June, again particularly around the 26th; the general heading was north-west or WNW. Among other interesting observations of birds on the move at this same time was an Arctic Skua (*Stercorarius parasiticus*) inland at Hurworth Burn Reservoir (Co. Durham) on 26th June; skua passage was reported on the east coast at that period.

HOOPOES AND BLACK TERNS

Reports of Hoopoes (*Upupa epops*) continue to come in for May and June. It seems clear that there was a good, though not exceptional, passage of these birds this spring, but that the number of stragglers to the northern half of the country was quite remarkable. Last month we mentioned observations in Co. Donegal, Derbyshire, Nottinghamshire, Lancashire, Yorkshire and Northumberland, mostly in the first three weeks of May. We have now heard that there were some seven reports at least from Scotland in the same period. Among these were single birds at Dirleton (East Lothian) on 2nd May, near Dunblane (Perthshire) on the 15th, at Elie (Fife) on the 16th, at Riccarton Junction (Roxburghshire) on the 17th and on the Isle of Arran (Bute) on the 22nd; there were also as yet unconfirmed reports of three at Denholm (Roxburghshire) from early May to at least the 12th and one at Gordonstoun (Moray) shortly before the 18th. Two at Cranford Park (Middlesex) on 21st June represent the latest observation we have of more than one bird.

Black Terns (*Chlidonias niger*) were seen in odd ones and twos throughout June and early July following the big influx in May (pp. 316-317). A somewhat northerly record among these was one at the Farne Islands (Northumberland) on 16th June. We should add here, however, that we are now told that there was one in Scotland (where the species is seldom recorded in spring) in the middle of May just after the peak of the movement further south: this was at Peppermill Dam (Fife) on the 15th.

SWIFTS AND COLLARED DOVES

Early Swifts (*Apus apus*) this year have been mentioned in each of our previous two summaries (pp. 279 and 320), but we think it worth referring to them yet again to complete the picture of first arrivals. One at Luton (Bedfordshire) on 19th April should be added to the extreme dates and we have also had a number of April records from Scotland, apart from the Perthshire one mentioned last month: on the 26th there was one at Carter Bar (Roxburghshire) and six in Clackmannanshire; on the 28th the species was noted at Duddingston, Edinburgh; and on the 29th two were seen at Bonnybridge (Stirlingshire) and the first arrivals appeared in Fife.

Finally, the Collared Dove (*Streptopelia decaocto*). We pointed out in the June number (p. 280) that there were signs of a new push by this bird and reports received since then confirm this. At least one new breeding site has been discovered, more stragglers have been noted at places like Fair Isle—including one at Stornoway in the Isle of Lewis (Outer Hebrides) on 2nd June—and a considerable increase is reported from some of the established breeding areas. At one town in Kent, for example, gatherings of up to 47 were seen at a poultry farm in July. It is therefore well worth keeping a special watch for this species now and we hope that new records will be reported to us as soon as possible.

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British Birds publishes material dealing with original observations on the birds of Britain and western Europe, or, where appropriate, on birds of this area as observed in other parts of their range. Except for records of rarities, papers and notes are normally accepted only on condition that the material is not being offered to any other journal. Photographs (glossy prints showing good contrast) and sketches are welcomed. Proofs of all contributions accepted are sent to authors before publication. After publication 20 separates of papers are sent free to authors; additional copies, for which a charge is made, can be provided if ordered when the proofs are turned.

Contributors are asked to observe the following points, attention to which saves a waste of much editorial time on trivial alterations:

Papers should be typewritten with double spacing, and on one side of the sheet only. Shorter contributions, if not typed, must be clearly written and with similar spacing. Failure to help in this way may result in delays to publication.

Notes should be worded as concisely as possible, and drawn up in the form in which they will be printed, with signature in block capitals and the writer's address clearly written on the same sheet. If more than one note is submitted, each should be on a separate sheet, with signature and address repeated. In the case of rarities records, any supporting description which is too detailed for publication should be attached separately.

Certain conventions of style and layout are essential to preserve the uniformity of any publication. Authors of papers in particular, especially of those containing systematic lists, reference lists, tables, etc., should consult the ones in this issue as a guide to general presentation. English names of species should have capital initials for each word, except after a hyphen (e.g. Willow Warbler, Black-tailed Godwit), but group terms should not (e.g. warblers, godwits). English names are those used in *The Handbook of British Birds*, with the exception of the changes listed in *British Birds* in January 1953 (46 : 2-3). The scientific name of each species should be given (in brackets and underlined) immediately after the first mention of the English name. Subspecific names should not be used except where they are relevant to the discussion. It is sometimes more convenient to list scientific names in an appendix. Dates should take the form "1st January 1960" and no other, except in tables where they may be abbreviated to "1st Jan.", "Jan. 1st", or even "Jan. 1", whichever most suits the layout of the table concerned. It is particularly requested that authors should pay attention to reference lists, which otherwise cause much unnecessary work. These should take the following form: CRICKER, B. W. (1949): "Species and subspecies: a review for general ornithologists". *Brit. Birds*, 42 : 129-134.

ATHERBY, H. F. (1894): *Forest Birds: Their Haunts and Habits*. London. p. 34. Various other conventions concerning references, including their use in the text, should be noted by consulting examples in this issue.

Tables should be numbered with Roman numerals, and the title typed above in the style used in this issue. The title and any headings within the table should be underlined, because this sometimes makes it difficult for the editor to indicate the type to be used. It is most important that the layout of each table should be carefully planned with an eye to its final appearance; above all, it should be borne in mind that tables must either fit into the width of a page, or be designed to fit a whole page lengthways. All tables should be self-explanatory.

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(with five plates)

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Three
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PLATE 50. Female Lesser Grey Shrike (*Lanius minor*), Bulgaria, June 1960. This shows the pattern of grey and white (pinker on the breast) with black mask, wings and tail. Note the stubby bill, relative lengths of tail and wings, black forehead, largely grey scapulars and lack of white superciliary (pages 398 to 400). In adult plumage the sexes are rather similar in appearance, but the female has browner-black mask and wings and a grey-speckled forehead (photo: Eric Hosking)

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Nearctic birds in Great Britain and Ireland in autumn 1958

By *Kenneth Williamson*

Migration Research Officer, B.T.O.

and *I. J. Ferguson-Lees*

ON THE LATER AUTUMN of 1958 an unusually varied selection of vagrant birds from across the Atlantic appeared in Great Britain and Ireland. The species involved included ones with normal distributions ranging from western Greenland and arctic Canada south to the eastern United States and Florida. Shorebirds and waterfowl, including six or seven species of North American waders, made up the bulk of the records as usual, but other groups were also involved, among them three purely American Passerines. In fact, the number and variety of the species made the autumn one of the most interesting on record for Nearctic birds. At the same time the main occurrences tended to group themselves into several more or less well-defined phases, largely in the second half of the period, from mid-September onwards; indeed, until then it had been an exceptionally poor time for American birds over here, with one or two Lesser Yellowlegs providing the only observations. These considerations made us think that it might be worth examining the records against the contemporary meteorological situation in eastern and arctic North America and over the North Atlantic Ocean. It is the purpose of this paper to set out our results while at the same time grouping the records together in one place for easy reference.

This analysis was actually prepared in draft form at the beginning of 1959, but it was decided to delay publication until the observations had been passed by the Rarity Records Committee then in the process of formation. Most of the occurrences summarised below appeared

in the first report of that Committee (*Brit. Birds*, 53: 153-173)—or in one case will appear among the additions for 1958 accompanying the 1959 report which is being published in the next issue of this journal. The only exceptions are the Baltimore Oriole, the Sabine's Gulls and the phalaropes. The final acceptance of the first of these still awaits the results of certain enquiries and Sabine's Gull was not added to the species covered by the Rarity Records Committee until 1959 (*Brit. Birds*, 53: 95); the phalaropes are not, of course, the concern of the Committee at all. In the systematic list which follows, therefore, the details have been kept to the barest minimum and the names of observers are given only in the cases of these species not already published in this journal. In all, occurrences of 17 species are summarised here. Of these, 14 were almost certainly of Nearctic origin, although the breeding ranges of the Snow Goose, Long-billed Dowitcher and Pectoral Sandpiper extend into north-eastern Siberia. The other three—the two phalaropes and Sabine's Gull—breed in (mainly arctic) Europe and Asia as well, but we have included them because consideration of the pattern of the autumn as a whole leads us to believe that some at least of the observations refer to birds from Greenland or arctic Canada. One other record that should perhaps also be mentioned is the Bridled Tern (*Sterna anaethetus*) which was picked up freshly dead near Weston-super-Mare, Somerset, on 17th October 1958 (*Brit. Birds*, 53: 32): unfortunately subspecific identification of the remains was not possible, but in view of the date and the prevailing picture of the autumn it is not unlikely that it was of the Caribbean race *recognita* rather than of the typical Afro-Asian form.

We are most grateful to all the people who have written to us about their records and should particularly like to acknowledge the help of Major R. F. Rutledge. A brief note in *Bird Migration* (1: 28) led to correspondence with Dr. I. C. T. Nisbet (then at Cambridge, Massachusetts) and Aaron M. Bagg (of Dover, Massachusetts) and we were very glad to have the views of these observers from across the Atlantic; attention must also be drawn now to the paper by Nisbet (1959) on the subject of North American waders in Great Britain and Ireland. R. A. French (of Rothamsted Experimental Station, Harpenden, Hertfordshire) also kindly gave us information on transatlantic movements of Lepidoptera and we thank him for permission to mention one of the records brought to his notice.

SYSTEMATIC LIST

In this list the number of records is given in parentheses after each bird's name. These are then itemised in chronological order, with the date first in bold type, so that cross-reference to the section on WEATHER CORRELATION is made easy.

Green-winged Teal (*Anas crecca carolinensis*) (2)

26th October and 2nd November, Downpatrick Marshes (Co. Down), ♂ showing the characters of this race. 23rd November, Akeagh Lough (Co. Kerry), ♂ ditto.

American Wigeon (*Anas americana*) (1)

9th October, Beaulieu Firth (Inverness-shire), immature ♂.

Surf Scoter (*Melanitta perspicillata*) (1)

3rd November-20th December, North Bull (Co. Dublin), immature.

Snow Goose (*Anser caerulescens*) (6 records involving 11 birds)

19th October-first week December, near Southport (Lancashire), adult blue phase. 22nd October-late November, Loch of Strathbeg (Aberdeenshire), three white phase. 6th November, Appin (Argyll), one white phase. 16th and 18th November, Kingoodie/Invergowrie Bay (Perthshire), one white phase. 30th November, near South Queensferry (West Lothian), four white phase. 8th December through the winter, South and North Slobbs (Co. Wexford), one white phase.

American Purple Gallinule (*Porphyrio martinica*) (1)

7th November (died on 9th), Hugh Town, St. Mary's (Isles of Scilly), immature.

Killdeer (*Charadrius vociferus*) (1)

20th November-2nd December, near Blennerville (Co. Kerry), one.

Short-billed or Long-billed Dowitcher (*Limnodromus griseus* or *scolopaceus*) (3)

20th and 30th September, Hule Moss (Berwickshire), one. 19th October-1st November, Kilbarrack (Co. Dublin), one. 3rd December, Blennerville (Co. Kerry), one.

In none of these cases were sufficient details noted for it to be decided which species of dowitcher was involved.

Lesser Yellowlegs (*Tringa flavipes*) (3)

10th August, Exe Estuary (Devon), one. 2nd September, Kingsbridge Estuary (Devon), one. 25th September, Havergate Island (Suffolk), one.

White-rumped Sandpiper (*Calidris fuscicollis*) (4)

9th October, Belfast Lough (Co. Antrim), one. 12th October, Tynningham Estuary (East Lothian), one. 12th-22nd October, Wembury Point (Devon), one. 22nd October, Inch, Castlemaine Harbour (Co. Kerry), one.

Note the closeness of the dates of these four occurrences.

Pectoral Sandpiper (*Calidris melanotos*) (6 records probably involving only 5 birds)

20th-28th September, Perry Oaks sewage-farm (Middlesex), one. 21st September, Akeagh Lough (Co. Kerry), one. 22nd September and following days, Ponsandene, Penzance (Cornwall), one. 23rd September-11th October, Skokholm

(Pembrokeshire), immature. **27th September**, North Slob (Co. Wexford), one. **27th-30th September**, Marazion Marsh (Cornwall), one, considered to have been the same individual as that at Ponsandene from the 22nd.

Note that the first dates of all these birds fall within a period of eight days. The Skokholm bird was caught in a single-shelf mist-net on 26th September and weighed 103.5 gm.

Buff-breasted Sandpiper (*Tryngites subruficollis*) (1)

18th September, Fair Isle, one.

Grey and Red-necked Phalaropes (*Phalaropus fulicarius* and *lobatus*) (at least 44 records involving over 90 Grey and some 14 Red-necked) These two species are dealt with together, and separated as G and R, because of the several indeterminate records which may refer to the one or the other.

14th September, Scaling Dam, Teesmouth (Yorkshire), one R (D. G. Bell, P. J. Stead *et al.*). **17th September**, Marazion Marsh (Cornwall), one G (Mr. and Mrs. R. H. Meares). **19th September**, St. Mary's (Isles of Scilly), one probably R (M. E. French). **20th September**, Abbotsbury (Dorset), 14 G seen, six picked up dead (F. Lexter). **22nd September**, St. Ives Island (Cornwall), five G, one R (N. R. Phillips). **23rd September**, St. Mary's (Isles of Scilly), two G, one dead (R. Symons). **24th September**, St. Ives Island (Cornwall), one R (N. R. Phillips). **24th September**, Tresco (Isles of Scilly), one G (E. A. Grove). **24th September**, Great Saltee (Co. Wexford), one G (per Major R. F. Rutledge). **24th September**, Berrow Sands (Somerset), one G (E. G. Holt). **24th September**, Titchfield Haven (Hampshire), one G (S. L. White). **24th-25th September**, King George V Reservoir (Essex), one G (A. B. Phillips). **24th September-12th October**, King George VI Reservoir (Middlesex), one G (*London Bird Report 1958*). **25th September**, St. Ives Island (Cornwall), five or six G (N. R. Phillips). **26th September-1st October**, Poole Harbour (Dorset), one G (Mrs. K. Adams *et al.*). **28th September-6th October**, Bardney (Lincolnshire), one R (C. T. Beverley, Mrs. L. Cave, A. D. Townsend *et al.*). **About a week to 5th October**, Freshwater Bay (Isle of Wight), four G (J. Stafford, J. M. Walton). **4th October**, Lyme Regis Cobb (Dorset), one G (J. F. Cancellor). **5th October**, Constantine Beach (Cornwall), one G (H. P. O. Cleave, T. J. Willcocks). **5th October**, St. Ives Island (Cornwall), one G (N. R. Phillips). **5th October**, Braunton Pill (Devon), one G (A. J. Vickery). **5th October**, Chew Valley Reservoir (Somerset), one G (R. F. Wills). **5th October**, Portland Bill (Dorset), nine and one probably G, four probably R (Portland Bird Observatory). **5th October**, Hengistbury Head (Hampshire), one probably G (F. R. Clifton). **6th October**, Lodmoor (Dorset), one G (Miss M. D. Crosby). **6th October**, Shoreham (Sussex), one G (B. A. E. Marr). **8th October**, off St. Agnes (Isles of Scilly), 15 + G (per J. L. F. Parslow). **9th-11th October**, Stanpit Marshes (Hampshire), two G, one killed on 11th (E. Cohen, J. Wright). **9th-12th October**, Epsom sewage-farm (Surrey), one G (M. J. Carter, K. D. Edwards *et al.*). **12th October-1st November**, Powderham (Devon), one G (R. F. Moore, R. G. Adams, F. R. Smith *et al.*). **12th and 18th October**, Queen Mary Reservoir (Middlesex), one G (*London Bird Report 1958*). **12th October**, St. Ives Island (Cornwall), two R (N. R. Phillips). **19th October**, St. Ives Island (Cornwall), one G (N. R. Phillips). **19th-23rd October**, Par Beach (Cornwall), one G (C. J. Stevens). **26th October**, Dibden (Hampshire), two R (T. E. Brice, Dr. C. Suffern). **"October"**, St. Mary's (Isles of Scilly), "several" G (P. Z. Mackenzie). **"October/November"**, Tollesbury

(Essex), one indeterminate (F. Foakes). **5th November**, Westward Ho! (Devon), one R (B. G. Lampard-Vachell). **14th November-5th December**, Shoreham (Sussex), one G (J. M. Twort *et al.*). **22nd November**, Slough (Buckinghamshire), one G (R. J. Johns). **22nd November**, Hanningfield Reservoir (Essex), one G (J. N. Lyster). **13th December**, South Gare, Teesmouth (Yorkshire), one probably G (J. Nicholson).

The above list may well not be quite complete, though as many county reports as possible have been checked for records. The total number of phalaropes observed in 1958 was not extraordinary—in fact, it was rather less than in 1957 (*cf. Brit. Birds*, 52: 33-42) and considerably less than in 1959 when at least 350 were recorded in one big flock at St. Agnes, Isles of Scilly (*Brit. Birds*, 53: 403). Nevertheless, with these exceptions, the total was probably more than in any other year since 1950 and the records provide an interesting background to those of the purely Nearctic species. It will be noted that all but a handful occurred in the 23-day period from 20th September to 12th October.

Sabine's Gull (*Xema sabini*) (6 records involving 7 birds)

20th August, Kinnegar (Co. Down), adult (T. Ennis, R. McKay, M. Grey). **24th September**, from R.M.V. *Scillonian* close to Isles of Scilly, adult (P. R. Colston *et al.*). **25th September**, St. Ives Island (Cornwall), two (N. R. Phillips). **28th September**, Lundy (Devon), immature (W. B. Workman *et al.*). **30th September**, Porthkidney Beach (Cornwall), adult (Rev. J. E. Beckerlegge). **4th October**, from R.M.V. *Scillonian* close to Penzance (Cornwall), immature (B. S. Milne).

Note that, with the exception of the first, all these observations fall within the peak period for the phalaropes.

Gray-cheeked Thrush (*Hylocichla minima*) (1)

29th October, Fair Isle, first-winter bird.

This bird was trapped and weighed 27.8 gm. It is only the second British and third European record. One was trapped at Fair Isle in October 1953 (*Brit. Birds*, 47: 266-269) and there was one at the Isle of Elba, Italy, in November 1901.

Northern Waterthrush (*Seiurus noveboracensis*) (1)

30th September-12th October, St. Agnes (Isles of Scilly), one.

This bird was trapped but unfortunately could not be weighed. It is the first British and only the second European record. One occurred at Ushant, France, in September 1956.

Baltimore Oriole (*Icterus galbula*) (1)

2nd-10th October, Lundy (Devon), immature female (W. B. Workman *et al.*).

This bird was trapped on 2nd October and at 27 gm. its weight showed a loss of about 25-30% on the normal for the season. If

finally accepted, it will be the first British record. One occurred in Shetland in September 1890 (see *Brit. Birds*, 48: 13), but has never been accepted because of the frequency with which the species was imported at that time.

WEATHER CORRELATION

August 10th and September 2nd

There were westerlies spanning the North Atlantic throughout early August, and a depression which left the St. Lawrence on the 5th, travelling eastwards, deepened until the 7th, when the winds on its southern periphery were as strong as Beaufort forces 8-9. The centre held a course between the parallels of 50°-60°N, so that only Ireland and the West Country were exposed to the westerly airstream. There was another period of similar cyclonic disturbance in the Atlantic, with offshore winds and frontal developments in the Nova Scotia and St. Lawrence areas, near the close of the month. It is quite possible, therefore, that the Lesser Yellowlegs recorded in Devon on 10th August and 2nd September were two different birds.

September 18th-25th

On 16th-17th September most of the North Atlantic was under the influence of a vast and very deep cyclonic system with its centre moving towards the entrance to Denmark Strait at 60°N. It had approached this position through the western half of the ocean, the eastern half meanwhile being embraced by a ridge of the Azores high, which, however, had moved to Scandinavia by the 18th. Before this date, Fair Isle was within the high pressure zone with the wind somewhat east of south, and it is extremely doubtful if any bird adrift in the Atlantic could have made a landfall there or elsewhere in the British Isles.

It does not seem likely that any of the birds of this period (except perhaps the Buff-breasted Sandpiper) could have been displaced from the NE States south of the St. Lawrence, and certainly the later arrivals (Pectoral Sandpipers and phalaropes) are more likely to have originated along the Labrador coast or in Davis Strait, reaching the ocean in the NW airstream on the western flank of the depression. This low was slow-moving, and the NW-W airstream was maintained during the 20th-21st. It is unlikely that any of the arrivals in this phase took place after the 23rd, except for Sabine's Gulls and phalaropes already well out at sea, and on the 22nd-23rd the meteorological indications are that such arrivals would be restricted by the airstream to southern Ireland and the West Country. The NW cyclonic airstream was confined to the eastern side of the Atlantic on the 24th, there being a depression to the north of the British Isles.

September 28th-October 2nd

The weather was not again conducive to Atlantic crossings until 27th September. The Bermuda high was strongly influencing the eastern States during the 24th-25th, and on the latter date a low moved across north-east Canada from Hudson's Bay, its fronts sweeping across the St. Lawrence Estuary and New England with moderate to fresh westerly winds in its warm sector. Britain at the time was covered by a high, which, however, passed to the Continent as the depression expanded off southern Greenland, so that by the 28th there were westerlies across the whole reach of the North Atlantic with a direct cyclonic airstream blowing between Davis Strait and the British Isles. This, which may well have brought the Sabine's Gulls, remained effective on the 29th, when a small but vigorous depression off Newfoundland came into the picture, having previously moved north with hurricane intensity along the American east coast.

The main depression then moved close to Ireland, and the Newfoundland low took a NE course to a position south of Cape Farewell, so that below the two depressions westerly winds spanned the Atlantic, with offshore breezes in the St. Lawrence Estuary and Newfoundland. This change coincided with the appearance of two Passerine migrants (Northern Waterthrush and Baltimore Oriole) at the south-western bird observatories of St. Agnes and Lundy: with a low centred over Ireland on the 30th and 1st, only south-west England and southern Ireland was exposed to the westerly airstream.

Concerning the events of this period, I. C. T. Nisbet (*in litt.*, 18.i.59) writes: "The Northern Waterthrush seems to have got mixed up in the hurricane which hit the North Carolina coast on 27th September. This was bringing rain to the whole eastern seaboard from the Gulf of St. Lawrence south during the night of the 27th-28th, but the weather cleared for the next night and the 29th was a big day all the way down the coast. Large migration on the coast usually coincides with NW winds, and records there are normally a good indication of when birds are being blown offshore. My guess would be that the Waterthrush left Nova Scotia or northern Maine on the evening of the 28th while the wind was still strong from the NW, wandered too far east and got caught in the westerly winds on the south side of the remains of the hurricane. The Baltimore Oriole is rather more interesting. If it could have left on the 29th-30th there was still an offshore wind in Newfoundland and the low that developed from the hurricane between Greenland and Iceland to take it on from there. On the other hand, the bird's weight suggests that it was newly-arrived on 2nd October, and in any case the 29th is much too late for an intelligent Baltimore Oriole to be in Newfoundland. It looks much more likely that it left from the middle part of the Atlantic

coast (somewhere between Virginia and Massachusetts) on the evening of the 30th, and started off north-east in the SW wind ahead of an advancing cold front." Evidence for such movements, bringing Baltimore Orioles and other species north-eastwards up the Atlantic coast of North America, has since been given in a paper by Baird, Bagg, Nisbet and Robbins (1959).

As a postscript to the events of this period, it is worthy of note that the capture of a North American moth, *Phytometra biloba*, at Torquay, Devon, on 1st October, was reported to R. A. French of the Rothamsted Experimental Station. This moth is fairly closely related to the Silver Y (*Plusia gamma*). There is one previous record of its being taken in Britain and that was at Aberystwyth, Cardiganshire, on 19th July 1954, following a period when a wind-borne Atlantic crossing was possible. One might comment that creatures of such small size would experience no difficulty in remaining airborne for a very long period in a region of atmospheric convergence such as is provided by a cyclonic system.

October 4th-5th and 7th-11th

Similar cyclonic conditions to those of 28th-29th September, with winds attaining forces 8-9 over parts of the Atlantic, and the airstream flowing to Britain from Davis Strait, continued intermittently during the early part of October. These conditions appear to have caught a part of the West Greenland phalarope population *en route* to its wintering area. The White-rumped Sandpipers which arrived in the later phase seem likely to have been carried eastwards when on migration from breeding-grounds in NW Greenland or the east Canadian Arctic.

October 13th-15th and 18th-20th

With a low moving from Denmark Strait across Iceland towards the Norwegian coast, there was a westerly airstream between Labrador-Newfoundland and the British Isles from late on 13th October to the 15th. Davis Strait and much of the east Canadian Arctic enjoyed col weather on 17th-18th October, with cyclonic westerlies over most of the Atlantic extending to Iceland on the 17th, but embracing Ireland and northern Britain on the 18th and the whole country next day. A vigorous depression situated between Newfoundland and Cape Farewell reimposed an ocean-wide westerly airstream from Nova Scotia to Europe on the 19th-20th. Thereafter conditions do not appear to have been propitious for an Atlantic crossing until the 28th-29th, when they were similar to those of 13th-15th October.

Aaron M. Bagg (*in litt.*, 21.i.59) and I. C. T. Nisbet have expressed the view that the Gray-checked Thrush which was trapped at Fair Isle on 29th October is most unlikely to have crossed in the westerly

weather at that time, when offshore winds on the American side were confined to Labrador and Newfoundland. Bagg points out that Griscom and Snyder (1955) give the autumn migration period for this species as 10th September-9th October (with 22nd October 1952 as an exception), while Palmer (1949) gives 11th September and 24th October as extreme dates. The weight of the Fair Isle example when trapped suggests that it probably was not newly-arrived in Britain on 29th October: at 27.8 gm. (1205 hours GMT) it was not greatly below the average of 33.4 gm. given by J. Baird of the Norman Bird Sanctuary, Rhode Island (*in litt.*, July 1960), for fall migrants in eastern North America, and had made a better recovery than the previous Fair Isle example of 6th October 1953 (Davis 1959). Too little is known about the rate of recuperation of transatlantic vagrants to permit of speculation, but it is probable that the bird in 1958 had been "off-passage" in Shetland for several days.

November 3rd-7th

A depression, moving north-eastwards along the American coast on the 3rd, passed out to sea south of Newfoundland on the 4th. During the period there were offshore breezes along the eastern coastline of the United States as far south as Florida, with frontal activity on the 3rd and mist and drizzle along most of the reach on the 5th-6th. A ridge, extending north to Newfoundland on the 5th, developed closed isobars next day, and the anticyclone expanded to cover most of mid-Atlantic on the 7th. With low pressure active to the north in Davis Strait and the Iceland region, there was a complementary westerly airstream between Newfoundland and south-west Britain and Ireland at forces 4-6; but even allowing for the offshore breezes and poor visibility in the south-eastern United States on the 4th-5th it is extremely difficult to see how the Purple Gallinule could have got into this airstream unless first carried as a vagrant far north of its normal range, perhaps by the northwards-travelling low of the 3rd-4th. However, this point is discussed by Nisbet (1960).

Quite independently, in the course of a study of the occurrence of some western North American birds in Bermuda on 2nd-3rd November and after, Aaron M. Bagg has suggested that the Purple Gallinule may well have got caught up in this depression, which moved from the Gulf of Mexico (31st October) through northern Florida (1st November) and Cape Hatteras (2nd) to Nantucket in Massachusetts (3rd) before passing out to sea.

CONCLUSIONS AND SUMMARY

(1) A systematic list of the unusually large number of records of Nearctic species in Great Britain and Ireland during the autumn of 1958 is given on pages 370-374.

and the occurrences are examined in the light of the North Atlantic weather conditions at that time. In all, 17 species are dealt with. Fourteen of these are truly Nearctic with normal distributions ranging from western Greenland to Florida, and there were no less than 32 records (involving some 36 individuals) in this category. The other three species are Holarctic ones and the 50-odd records involving about 110 individuals are included because some at least of the observations clearly refer to birds from Greenland or arctic Canada.

(2) The most frequent pressure-pattern which gave rise to Atlantic crossings by American waders (particularly Pectoral and White-rumped Sandpipers), and also Grey Phalaropes and Sabine's Gulls, showed a cyclonic NW wind over Labrador and Davis Strait, occasionally extending to West Greenland, backing westerly in mid-Atlantic on the periphery of vigorous depressions in the neighbourhood of Denmark Strait.

(3) A few of the depressions reaching the North Atlantic storm-track came down from the Hudson's Bay region of Arctic Canada, sweeping across the St. Lawrence waterway and Newfoundland to pursue a NE course. Offshore westerly winds and poor visibility at the fronts, causing drift, are associated with these depressions.

(4) Other depressions, sometimes at hurricane intensity in their early stages, take a similar path into the Atlantic after travelling NE along the eastern coast of the United States, from as far south as Florida. In such cases, birds are often displaced northwards to reach New England and Nova Scotia as vagrants, and there is a risk of drift out to sea. The appearance of two Passerines (Northern Waterthrush and Baltimore Oriole) in SW England followed this pattern, also the occurrence in the Isles of Scilly of an American Purple Gallinule.

(5) A down-wind directed flight is strongly indicated in the sometimes very local grouping of the arrivals, the fall being confined to that part of the country which is exposed to the westerly airstream.

(6) A North American moth, *Phytometra biloba*, was captured in the same geographical area as the two American Passerines, and at the same time.

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Autumn "drift-migration" on the English east coast

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(Concluded from page 352)

TIME OF DAY OF ARRIVALS

The times at which migrants actually arrived were occasionally recorded, all of the following instances referring to typical Continental species such as Pied Flycatchers. On 12th September 1949 there were few migrants at Gibraltar Point before 1800 hours and there was then an influx (Smith *et al.* 1950). On 24th August 1951 there were very few at Spurn at 0700 hours and large numbers twelve hours later, but watch could not be kept in between (*per* R. Chislett). On 1st October 1951 the huge arrival of Robins occurred from noon onwards (Daukes 1952, Smith and Cornwallis 1952, Jenkins 1953). On 21st August 1954 there was a sudden influx at Gibraltar Point at 1100 hours and on the opposite side of the Wash an hour later (Cornwallis 1955, Nisbet 1955). At Cley on 24th September 1955 there was a marked arrival from the sea in the afternoon, against a light south-westerly wind (*per* R. A. Richardson). At Holme in north-west Norfolk many migrants were already present by 1400 hours on 2nd September 1956, and many more continued to arrive until 1800 hours, while most of a big arrival there a week later appeared during the afternoon (Wallace and Vine 1957). Finally, on 6th September 1959 an increase was obvious at Spurn by late afternoon (R. Chislett *in litt.*). Hence some big arrivals started and others continued after midday, but both Chislett and R. K. Cornwallis (*in litt.*) informed me that Continental migrants were often present already in the early morning and that the less frequent afternoon arrivals were singled out for publication.

The migratory impulse of a small Passerine night-migrant is probably weakest in the afternoon, especially if it has been flying since the previous evening. Hence it is possible that the proportion of arriving migrants actually alighting on the coast is higher in the afternoon than in the first hours of daylight. North Norfolk and east Yorkshire are about 400 miles from south Norway, a distance which a warbler might fly in 14 hours in still air. Therefore small birds leaving Norway soon after dark should have reached the English coast by the early morning with a following north-easterly wind, and well before noon with a south-easterly cross-wind. Arrivals later in the day

might occur for two distinct reasons, either if the sea-crossing were slowed down or if migrants continued to leave Scandinavia until the early morning.

The factor most likely to retard the sea-crossing is a head-wind. Hence it may be significant that one big and four moderate arrivals included in Table IV, and three other moderate arrivals discussed in Appendix B, occurred with a nearly opposed wind between SSE and south in the southern North Sea, while six other moderate arrivals discussed in Appendix B took place with a south-westerly wind in the southern North Sea. On one of the latter occasions migrants were actually recorded coming off the sea at Cley during the afternoon, as just mentioned. Another retarding factor might be full overcast over the sea at night, since radar has shown that migrants are disoriented in fog; and, if they then fly at random until they can again see to navigate (perhaps only with the appearance of the sun next morning), they might reach England several hours later than usual.

The second possibility is that, having started in the interior of Scandinavia at dusk, night-migrants might sometimes continue putting out to sea from southern Norway until the early morning, in which case the latest to leave would not reach England until the afternoon. I might add that radar has shown that in September night-migrants not infrequently continue putting out to sea SSE from East Anglia until the early morning, though the conditions in which this happens have not yet been studied. As already mentioned, radar has also demonstrated that in East Anglia in September there are at least moderate departures nearly every night, and that here the traditional picture of autumn migration proceeding by big rushes in anticyclones, with long intervals in disturbed weather with hardly any movement, is much exaggerated. But the pattern of Continental arrivals at the observatories fits much better with this traditional view, since all save one of the big arrivals and most of the moderate ones occurred with anticyclonic weather in southern Scandinavia. This might be explicable if seaward departures from Norway tended to continue into the early morning to a greater extent in anticyclonic than disturbed weather; it would then be primarily in anticyclonic weather that migrants reached the English east coast in the afternoon, and so had a strong tendency to alight instead of continuing inland. This idea is entirely speculative, but seems worth further study.

It may be added that two British-type movements in westerly weather at Gibraltar Point, primarily of Whitethroats and Willow Warblers, were both confined to the early morning, one reaching its peak at 0730 and both being over by 0900 hours (Smith *et al.* 1950 for 7th September 1949, Smith and Cornwallis 1952 for 1st September 1951).

VARIATIONS BETWEEN THE THREE OBSERVATORIES

Big or moderate Continental arrivals at one observatory were sometimes, but far from always, accompanied by arrivals of similar size at the others. Omitting British-type departures, there were in the main period studied here 15 days on which at least a hundred birds arrived at one observatory. On six of these days at least a hundred birds also arrived at each of the other observatories, but on three more of these days the number of arrivals at one observatory was six or seven times as great as at an adjacent one, and on five others it was more than ten times as great. (On the remaining day comparisons were impossible, as only one observatory was manned.) Again, there were 19 further days on which 50-99 birds arrived at one observatory. On six of them this number was similar to that at adjacent observatories, being at most three times as large, and on seven other days it was only between four and eight times as large, but on two days it was respectively 14 and 17 times as large as at an adjacent observatory, and on four others only a single arrival, or none, was recorded at one of the other observatories. The local variations were therefore very large, and similar examples could have been cited from the days on which at most 20-49 birds arrived at one of these three observatories on the east coast.

Big differences on the same day between adjacent observatories were so frequent that they were clearly genuine, and were not due, for instance, to faulty counting. Their cause cannot lie either with the weather influencing departures from Scandinavia on the previous night, or, usually at least, with the wind-conditions influencing drift in the North Sea; for such factors should affect all three observatories to a similar extent, except on the presumably rare occasions when the birds reaching, respectively, south Yorkshire and north Norfolk meet different wind-conditions in the North Sea. Their cause must normally lie with purely local weather factors in the neighbourhood of each observatory influencing the number of arriving migrants that alight there instead of passing inland. It might perhaps need only a slight difference in the local weather to induce a hundred instead of ten migrants to alight at the coast, especially if this were only a small fraction of the number passing overhead. However, if this argument is sound, it follows that purely local factors of this nature were of paramount importance in at least half the big and moderate arrivals under consideration, *i.e.* in all those in which there were big local differences in the number of arrivals on the same day; further, they could also have been of paramount importance on other days on which, by chance, the local factors influencing descent at the coast were similar at adjacent observatories.

THE RARITIES

Most rare species were much too infrequent for the type of analysis used in this paper, but it is important to investigate them in so far as possible, since Williamson (especially 1959) based much of his case for down-wind drift on the eastern rarities. He particularly studied the Red-breasted Flycatcher, and postulated that the Barred Warbler and many Icterine Warblers and Bluethroats came in the same category. The Bluethroat, however, would seem to be in a different class, since it breeds in the far north and migrates south-west in autumn, whereas the other three species breed mainly in eastern Europe south of Fenno-Scandia (into which the Icterine and to a lesser extent the other two just extend) and migrate south-east in autumn. Rudebeck (1956) argued that a small proportion of Red-breasted Flycatchers and Barred Warblers (also Yellow-browed Warblers) must migrate south-west, at times with westerly winds (*cf.* Otterlind 1944, Christensen 1952). Williamson, on the other hand, postulated that the individuals of these species reaching Britain are juveniles on a dispersal before their autumn migration.

The occurrences of these species at the three observatories have been analysed in Table VIII. Most were single birds, and some of them perhaps arrived a day or two before they were first recorded, either because they were overlooked, or because they landed a few miles away and later moved into the observatory area, or because they descended at the coast on a redetermined departure from England. (For instance, on two occasions a Bluethroat was first recorded in what was, for this species, unusual weather, on the day after other Bluethroats had appeared in typical weather.) But the watch for rarities is so close that most of them probably arrived on the day that they were first seen.

Also, such possible objections should apply equally to all four species, but Table VIII reveals a marked difference between the Bluethroat and the others. Thus nearly half the Bluethroats but only one-tenth of the Barred Warblers came on the few days with big arrivals of other Continental migrants; two-thirds of the Bluethroats but only one-seventh of the Barred Warblers came in anticyclonic weather with easterly winds throughout the North Sea; and Bluethroats rarely but Barred Warblers fairly often arrived with north-westerly winds. In these respects the Red-breasted Flycatcher, and less certainly the Icterine, resembled the Barred Warbler and not the Bluethroat. Finally, all four species were rare with south-westerly winds, and their arrivals were apparently irrespective of the presence or absence of fog or total cloud at either end of the North Sea.

From Table VIII it may safely be concluded that Bluethroats

AUTUMN "DRIFT-MIGRATION" ON EAST COAST

TABLE VIII—ARRIVALS OF FOUR RARER SPECIES AT THREE BIRD
OBSERVATORIES ON THE EAST COAST OF ENGLAND, 20TH AUGUST-
10TH OCTOBER 1949-1959

Number of birds arriving in conditions of each type

	Bluethroat (<i>Luscinia svecica</i>) (64)	Barred Warbler (<i>Sylvia nisoria</i>) (51)	Red- breasted Flycatcher (<i>Muscicapa parva</i>) (39)	Icterine Warbler (<i>Hippolais icterina</i>) (19)
<hr/>				
<i>Size of accompanying arrival</i>				
Big	29	5	5	3
Moderate	10	3	6	5
Small	8	18	14	5
Negligible	17	25	14	6
<i>Weather situation</i>				
Settled with E winds	42	7	10	5
Other types of settled	8	23	20	6
Transitional	9	10	6	6
Disturbed with W winds	2	7	1	2
Other types of disturbed	3	4	2	—
<i>Wind in north-eastern North Sea</i>				
N, NE or light variable	23	21	18	7
E or SE	34	10	11	5
S or SW	3	4	2	1
W or NW	4	16	8	6
<i>Wind in southern North Sea</i>				
N or NE	12	16	9	6
E or SE	39	14	22	8
S or SW	7	3	3	1
W or NW	6	18	5	4
<i>Full overcast in north-eastern North Sea</i>				
Present	35	29	26	14
Not recorded	29	22	13	5
<i>Full overcast in southern North Sea</i>				
Present	29	17	22	6
Not recorded	35	34	17	13

reached eastern England in autumn in the same conditions as the main Continental arrivals studied in this paper. It is particularly interesting that some Bluethroats came with the few big arrivals that occurred in

less typical weather, notably on 22nd August 1954, 20th September 1957 and 6th September 1959. Hence the weather factors affecting the Bluethroats can be taken to be the same as for the main Continental arrivals and need not be set out separately; this means that there is no need to suppose that Bluethroats usually came down-wind or were significantly affected by full overcast.

It may also be concluded from Table VIII that the appearances of Barred Warblers and Red-breasted Flycatchers were affected by at least partly different factors from the main Continental arrivals. Hence these species should not be used as "markers" of the main arrivals. This difference may also be taken to favour the view of Williamson (1959), as against that of Rudebeck (1956), that in the Barred Warbler and Red-breasted Flycatcher a juvenile dispersal, not a true south-westward migration, is involved, particularly as all identified British individuals of these species in autumn have been young birds. Further, on Fair Isle the Bluethroat is sparse but regular in both autumn and spring, whereas the Barred Warbler and Red-breasted Flycatcher are sparse but regular in autumn and absent in spring, again suggesting that their autumn appearances may be abnormal. On the other hand, Table VIII provides no support for Williamson's view that these two species reach England by down-wind "drift". Provided that at least most of the recorded dates of arrival can be trusted, arrivals with north-westerly winds were not infrequent. It is true that many more Barred Warblers and Red-breasted Flycatchers came with easterly winds than would be expected if their arrivals had been independent of wind-direction, but the proportion coming with easterly winds was markedly lower than for the common Continental migrants and for the Bluethroat. Further, there was apparently no correlation between their occurrences and the presence of fog or total cloud round the North Sea. I therefore see no reason to postulate that either the Barred Warbler or the Red-breasted Flycatcher reach eastern England in autumn by down-wind directed drift (migration or dispersal).

THE RADAR EVIDENCE

Full analysis of the radar watch must await another season's findings, but radar observations for the days in 1958 and 1959 when big and moderate arrivals were seen at the observatories are summarised below. The sea-area to which the observations refer was out to 50-60 miles off north and east Norfolk. In the following summary the reader may assume that, unless otherwise stated, the movements described were moderately large and consisted of the very small echoes that I have come to associate with small Passerine migration; but all other bird echoes seen on the day in question have been mentioned. The speed

and direction of the wind are those at 900 metres above Hemsby at 0500 hours, and from these figures I have calculated the heading of the migrants (these being rough estimates, as the wind was probably somewhat different where the birds were flying). Movements i-vii inclusive were watched by me, and viii-xii by M. T. Myres.

(i) Evening of 2nd to morning of 4th September 1958; big arrivals at observatories; 15 to 20-knot SE wind. At every visit, including all day on 3rd, I saw very many echoes moving between SW and WSW, so that the birds were heading a little west of south. (This movement was sometimes obscured by larger wader-type echoes moving west.)

(ii) 9th September 1958; moderate arrivals at observatories; 24-knot NW wind behind a depression moving east across North Sea during night. After the cessation of a nocturnal departure south of east, the only movement from 0700 hours through the morning and afternoon was almost due south, being to the east of Norfolk a little east of south and to the north-west slightly west of south. Hence the birds were heading about south-west and did not travel down-wind by "cyclonic approach".

(iii) 13th September 1958; moderate arrival at Cley only; 10-knot SE wind. Echoes moved between SW and WSW, so the birds' heading was near to south-west. The movement was almost restricted to the morning, with extremely little in the afternoon.

(iv) 2nd September 1959; moderate to small arrival at the observatories; 10-knot E wind. There were two rather small movements of echoes, SSW and slightly south of west respectively (the headings were not greatly different); heights were recorded to 15,000 feet.

(v) 6th September 1959; big arrival at Spurn, moderate at Cley; 11-knot SE wind. Between 0600 and 0700 hours the coast was sharply outlined on the radar display because a big SSW movement from over the sea stopped there, indicating that the birds descended on reaching it. The birds' heading was nearly due south. There were also small movements of Passerine-type echoes SSE and W, with a very few NW (down-wind), but the SSW movement was so much the largest, and stopped so abruptly at the coast, that it was presumably the Continental arrival seen at the observatories. Heights extended to 16,000 feet. All these movements had almost ceased by 0920 hours.

(vi) 11th September 1959; moderate arrival at Cley only; 5-knot SE wind. There were two small movements SSW and W respectively, with a very small one SSE (headings similar). Heights extended to 18,000 feet and once 19,000.

(vii) 17th September 1959; fairly large arrival at Spurn, small one at Cley; 16-knot NE wind. Between 0500 and 0630 hours there was a rather large movement SSW (heading similar). As on 6th September, the echoes stopped abruptly at the coast, meaning that the birds descended there. Heights were up to 16,000 feet, once 19,000. By 1000 hours this movement had been largely replaced or obscured by one WSW, which included larger wader-type echoes so was probably not the Continental arrival seen at the observatories.

(viii) 30th September 1959; moderate arrival at Spurn and Cley; 24-knot SE wind. The radar data were quite inconclusive, because small Passerine-type echoes (some going SW, others W and NW) were obscured by a big W movement including larger echoes, and as Starlings (*Sturnus vulgaris*) and Lapwings (*Vanellus vanellus*) were later seen coming in west off the sea, the W movement was presumably not the Continental arrival of small night-migrants at the observatories.

(ix) 4th October 1959; big arrivals at Spurn and Cley; 23-knot SE wind. There were two radar movements, one SSW (heading SSE), which was large at

0600 hours and moderate for the rest of the day, and the other WSW (heading SSW), which was small at 0600 hours and moderate thereafter, in the afternoon being rather larger than that tracked SSW. From the visit at 1000 hours onward the coast was sharply outlined, meaning that the birds descended on reaching it.

(x) 5th October 1959; big arrivals at Spurn and Cley; 20-knot SE wind. As on the previous day, there were many echoes moving both SSW and WSW, but those moving WSW (heading SSW) predominated throughout. Echoes over the land ceased about 0540 hours, after which the coast was sharply outlined, indicating that the birds descended there after it was light. Both movements were observed later in the morning, but they were then obscured by a big W movement, obviously of diurnal departures from Holland; the latter, unlike the others, continued inland and did not stop at the coast.

(xi) 7th October 1959; moderate arrival at Spurn, very small one at Cley; 7-knot wind from just west of south. Between 0530 and 0730 hours many echoes moved SSE and even more SSW (headings similar). The overland movement ceased about 0700, after which the coast was sharply demarcated, showing that the birds descended there. Heights extended to 15,000 feet. By 1000 hours the SSW movement had ceased, but the SSE one was still strong, as it was in the late afternoon.

(xii) As already mentioned, there was also a moderate passage at Spurn on 17th October 1959, with a 30-knot SSW wind, presumably a redetermined movement, when no bird-echoes were seen by radar out to sea.

Omitting the last instance, and also the eighth, when directions were indeterminate, there were radar records for ten big or moderate arrivals at the observatories. The only feature common to all of them was a movement over the sea of small Passerine-type echoes heading about SSW. Usually, though not always, this was the largest movement observed, and presumably it was the Continental arrival recorded at the observatories. This fits with the evidence given earlier that the birds in question have normally come from Scandinavia. During the biggest arrivals watched, on 2nd-3rd September 1958 and 4th-5th October 1959, bird-echoes heading SSW were present out to sea throughout the day, but on some other days only during the morning, and on a few occasions only during the early morning. Often in 1959 the echoes heading SSW were seen to stop abruptly at the coast, indicating that the birds descended there (a point that could not be checked in 1958). The actual track varied between WSW and south, depending on the direction of the wind, and the calculated heading varied between south-west and south (usually SSW), perhaps partly due to errors in assessing the wind. In addition to this movement, Passerine-type echoes were seen heading SSE on four days, just south of west on three days, and once in very small numbers north-west (down-wind), but these movements were too infrequent to have been the Continental arrivals.

The radar evidence therefore fits the view that the track of the Continental arrivals was a resultant between their heading and the wind. They did not normally come down-wind. Nor were dis-oriented movements seen on any of these occasions, thus agreeing

with the evidence given earlier in this paper that total overcast was at most a very subsidiary factor in these arrivals.

Radar also showed that on many other fine mornings in September 1958 and 1959, with light easterly, north-easterly and occasionally north-westerly winds throughout the North Sea, and with negligible or very small arrivals at the observatories, there were, nevertheless, moderate and occasionally large SSW movements of echoes in the North Sea north of Norfolk similar to those seen on the days with big and moderate Continental arrivals. This might suggest that the SSW movements on radar had nothing to do with the Continental arrivals, but in my view it really means that, with light winds, many Scandinavian night-migrants reach Norfolk but continue inland without alighting at the coast. This is supported by the fact that on the days in question there were usually some, though extremely small, arrivals at Cley of typical Continental species, and it reinforces the argument developed earlier that the number of migrants at the observatories depends partly on factors causing them to alight at the coast.

CONCLUSION

If the reader wishes to plan his holiday on the English east coast to coincide with a big arrival of Continental night-migrants, he should obviously choose a period of anticyclonic weather in southern Scandinavia with a strong south-easterly wind in the southern North Sea (and he need pay no attention to overcast). But while most big and various moderate arrivals occurred in this type of weather, and while this type of weather rarely occurred without a sizeable arrival, some big and many moderate ones took place in other types of weather; hence other weather factors had an important influence at times. I began the present study with the unconscious assumption that all "drift-arrivals" had a single, if complex, cause, and that when the critical weather factors had been discovered and set out, one group of such factors would be found to have been associated with all the sizeable arrivals. But this was not so, and if the reader has been bewildered by parts of the foregoing evidence, it is not without good reason. The first conclusion, therefore, is that no one set of weather factors held for all "drift-arrivals", and that the answer is not single or simple.

As mentioned earlier, the size of Continental arrivals on the English east coast is, at least potentially, affected by (a) the numbers leaving southern Scandinavia, (b) the proportion drifted off-course by lateral winds, and (c) the proportion of those reaching England that alights at the coast. However, big and moderate arrivals occurred so infrequently that factors affecting (a), the numbers leaving Scandinavia, clearly had a very minor influence. If there is to be an arrival in eastern England from Scandinavia, migrants must of course leave

there during the night, and this factor provides part of the reason why most big and many moderate arrivals occurred in anticyclonic weather. But it is obvious that there must have been many nights when large numbers of migrants left Scandinavia without there being an appreciable arrival on the English east coast next day.

I at first followed the observatory workers in supposing that factors affecting (b), the westward drift of migrants in the North Sea by easterly winds, were of primary importance. It is hard to dissociate oneself from an idea now so generally accepted, and the term "drift-migrant" speaks for itself. Moreover my first analysis in Table III showed that nearly all big and most moderate arrivals in eastern England occurred with easterly winds throughout the North Sea, and most of the rest with an easterly wind in part of that area. I at first followed precedent, therefore, in ascribing the few arrivals with westerly winds throughout the North Sea to redetermined departures of migrants drifted over to England on an earlier occasion. Hence, though it soon became clear that the big and moderate arrivals were not correlated with full over-cast, so that the manner of drift posulated by the observatory workers seemed inapplicable, I still supposed that these arrivals were primarily attributable to drift by lateral displacement.

Gradually, however, the contrary evidence accumulated. Firstly, there were many days with easterly winds throughout the North Sea but negligible arrivals at the observatories. Secondly, a few big and moderate arrivals occurred with a following north-easterly wind, or with an extremely light easterly wind, when westward drift was presumably negligible. Thirdly, a few moderate and many small arrivals that included Continental species took place with westerly winds throughout the North Sea, in circumstances in which redetermined departures could almost certainly be excluded. Fourthly, on about half of the occasions with a big or moderate arrival at one observatory, extremely few birds arrived at an adjacent observatory. Finally, there were many days of anticyclonic weather with very light winds, so that drift was negligible, when an extremely small number of Continental migrants arrived at the observatories, but radar revealed a moderately large movement heading SSW into East Anglia.

From this evidence I conclude two things. Firstly, in the absence of westward drift in the North Sea, there is a regular passage of night-migrants from Scandinavia to eastern England in autumn. Secondly, though arrivals tend to be larger with easterly winds, this is only partly due to drift, and partly to more birds leaving Scandinavia in the associated anticyclonic weather, while the numbers at the observatories are primarily influenced by the factors which cause passing migrants to alight at the coast instead of proceeding inland.

Bearing these considerations in mind, my provisional explanation

PLATE 51A. Male Lesser Grey Shrike (*Lanius minor*), Hungary, June 2. Note his purer black mask and the light patch confined to primaries (page 399)



PLATE 51B. His mate just below their nest in a slender plum-tree; a fruit-tree site is common (page 400). She has a beetle, a favourite food of the species (page 402)

PLATE 51C. Their fork nest with five fully fledged young. Especially note that immatures lack the adult's black forehead (page 402) (photos: K. Koffán)







PLATES 52 (left) and 53 (above). Female Lesser Grey Shrike (*Lanius minor*), Bulgaria, June 1960. Note again the dark forehead, the proportions of tail and wings and the size of the wing-patch. Beetles, grasshoppers and mole-crickets form the main diet of this largely insectivorous species. The nestling bird in plate 53 is one of the shrike's own which died and had to be carried away. The nest is made of the soft leaves and flowers of weeds (page 401) (photos: Eric Hosking)



PLATE 54. Above, female Lesser Grey Shrike (*Lanius minor*), Hungary, June 1952, showing the heavy bill (photo: K. Koffán). Below, the site of plates 50, 52 and 53, a thorny pear-tree with a trackside lookout in a cultivated area; the inset illustrates the bird's pattern and upright stance (page 400) (photos: Eric Hosking)



of the Continental arrivals at Spurn, Gibraltar Point and Cley is as follows. In September night-migrants set out over Scandinavia, especially in anticyclonic conditions, but more often than usually supposed in transitional or disturbed weather, except that they rarely set out with warm south-westerly or westerly winds. There is no reason to think that more set out on the first fine night after a disturbed spell than on each fine night during a settled spell. The migrants travel on a broad front with a heading, for those reaching England, of about SSW. They do not change this heading on reaching the Norwegian or Danish coast, and continue on a broad front SSW out to sea.

With extremely light winds, or with a following north-easterly, part of this migration reaches eastern England on its normal (undrifted) course, but most pass inland and extremely few (though usually some) land at the observatories each day. With south-westerly head-winds, when lateral drift is also negligible, migrants do not usually set out from Scandinavia, so none normally arrive in England (though occasionally some do). With north-westerly winds many usually leave Scandinavia, but with light winds most pass over the English coast without alighting and with strong winds many are presumably drifted eastward away from England, so that in either case few are seen at the observatories. With easterly and south-easterly winds, which usually occur with an anticyclone, particularly large numbers set out from Scandinavia and, in addition to those crossing England on their normal heading, others that would normally have passed further east are deflected to eastern England. The stronger the wind, the more extensive the deflection, but this tendency may be partly offset by a strong wind in Scandinavia militating against departures.

The track over the sea of the migrants reaching England is normally the resultant between their SSW heading and the wind (as shown for both easterly and north-westerly winds). The only exception is in fog or drizzle, which the birds rarely meet as they do not start in such conditions. In fog or drizzle at sea they are disoriented, so their headings become random and they are, on average, carried down-wind at the speed of the wind. But probably they rarely drift far in this way, since fog normally occurs with a light wind and the sun usually breaks through fog by day in September; hence the effect (if any) of fog is probably delay, rather than displacement, on the night crossing.

When the migrants reach England, many probably alight at the coast if there is a head-wind, a strong cross-wind, frontal rain or, perhaps, full overcast, and such factors have a bigger influence on the number of arrivals than either the weather in Scandinavia or the extent of drift in the North Sea. Further, they often produce marked differences in the number of arrivals at adjacent observatories on the same

day. It may be added that head-winds, strong cross-winds, frontal rain and full overcast are unusual on the east coast of England with the anticyclonic weather in which most migrants probably leave Scandinavia.

Finally a few eastern rarities, notably the Barred Warbler and Red-breasted Flycatcher but not the Bluethroat, arrive under rather different conditions from the main migrants, possibly on a juvenile dispersal (though not a down-wind one), but the reasons for this curious movement have not yet been elucidated.

The multiple explanation offered above seems to account for the main Continental arrivals in eastern England, without conflicting with any of the facts, while it also accords with what is known of migration elsewhere and introduces no new principle. If it is accepted, then the term "drift-migrant" should presumably be discarded, at least for the area under discussion, since many of the birds concerned may occur in eastern England in the absence of appreciable westward drift. Moreover, there is a sense in which every migrant is a "drift-migrant", except for the very few which have travelled with a completely following or completely opposed wind. In eastern England, also, there seems to be no correlation between the arrivals of Continental night-migrants and full overcast, and there seems no need, at least in this area, to postulate that migrants over the sea in full overcast descend low and, by reference to the waves, re-orient themselves to fly down-wind until they reach land, or that they fly down-wind round a depression ("cyclonic approach"), or that they use any other form of "down-wind directed drift" on migration or dispersal. Hence there is no need in this area to suppose that "drift-migration" is a special habit evolved as an adaptation to bring migrants disoriented by overcast at sea quickly back to land. Finally, I think it likely that these conclusions hold more widely than for eastern England and the southern North Sea.

SUMMARY

(1) The arrivals of night-migrant chats, warblers and flycatchers at English east coast observatories were analysed each day from 20th August to 10th October 1949-1959 inclusive.

(2) Most migrants evidently came from Scandinavia, but they were a minute fraction of the birds leaving there in autumn. A few were departures from England.

(3) Most big and moderate arrivals occurred with an anticyclone in Scandinavia and strong south-easterly winds in the southern North Sea, but others took place in a variety of different conditions, a few with westerly winds throughout the North Sea.

(4) An anticyclone in southern Scandinavia favours departures, but on many such days there were negligible arrivals in eastern England. Warm south-westerly weather is very unfavourable, but a few arrivals occurred in disturbed weather.

(5) Most arrivals took place with easterly winds, partly due to drift but partly

because east winds occur with anticyclones, but on many other days with easterly winds there were negligible arrivals. Part of the Scandinavian migration crosses eastern England in the absence of drift.

(6) The most influential factors were those affecting the proportion of migrants alighting at the English coast. Their influence was often local. Alighting is probably favoured by head-winds, strong cross-winds, rain and full overcast.

(7) Many big and moderate arrivals occurred when neither fog nor total cloud was recorded at either end of the North Sea.

(8) The migrants' track was the resultant between a SSW heading and the wind.

(9) At least in the area studied, there is no need to postulate that "down-wind directed drift" occurs, or that drift-movements are an adaptation enabling migrants disoriented by overcast at sea to regain the land as quickly as possible.

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APPENDIX A—SUMMARY OF MOVEMENTS AT THREE BIRD
OBSERVATORIES ON THE EAST COAST OF ENGLAND,
20TH AUGUST-10TH OCTOBER 1949-1959, GROUPED UNDER
SIZES AND AREAS OF ORIGIN

Days with moderate Continental arrivals

In 1949, 21st, 24th and 27th August, 4th, 5th, 10th and 13th September, 8th October; in 1950, 23rd and 26th August, 6th October; in 1951, 6th September, 4th October; in 1952, 4th and 30th September, 1st and 3rd October; in 1953, 15th, 16th and 23rd September; in 1954, 20th August, 12th September; in 1955, 20th and 29th August, 24th September; in 1956, 10th, 18th and 24th September; in 1957, 30th September; in 1958, 1st, 6th and 9th September; in 1959, 22nd August, 2nd, 17th and 30th September, 7th October.

Days with small Continental arrivals

In 1949, 12th, 22nd and 24th September, 7th October; in 1950, 21st and 31st August, 15th September; in 1951, 5th, 7th and 10th September, 3rd October; in 1952, 23rd August, 9th September, 5th October; in 1953, 22nd August, 6th and 7th September; in 1954, 28th August, 1st and 6th September; in 1955, 23rd and 28th August, 6th and 7th September; in 1956, 3rd, 6th, 9th, 19th and 25th September; in 1957, 29th August, 8th, 12th and 13th September; in 1958, 28th, 29th, 30th and 31st August, 13th September; in 1959, 31st August, 1st, 3rd, 11th, 14th and 19th September.

Days with very small Continental arrivals

In 1949, 14th and 23rd September; in 1950, 1st and 3rd October; in 1951, 30th August and 8th October; in 1952, 5th, 11th, 18th, 19th and 22nd September; in 1953, 30th August; in 1954, 23rd August, 9th and 30th September, 3rd October; in 1955, 24th and 25th August, 20th and 23rd September; in 1956, 7th, 22nd, 23rd and 26th September; 2nd and 8th October; in 1957, 3rd, 7th, 16th, 17th, 28th and 29th September; 3rd October; in 1958, 17th and 26th September; in 1959, 7th and 8th September.

Days with moderate British-type departures

In 1949, 10th September; in 1950, 3rd, 9th and 10th September; in 1951, 20th, 23rd and 28th August, 16th September; in 1953, 21st and 25th August; in 1954, 4th September; in 1956, 21st and 29th August, 8th September; in 1957, 21st August; in 1959, 23rd August.

Days with small British-type departures

In 1949, 29th August; in 1950, 14th and 25th September; in 1951, 25th August, 5th September; in 1952, 24th and 28th August, 2nd, 6th and 7th September; in 1953, 23rd, 29th and 31st August, 4th September; in 1955, 31st August, 3rd September; in 1956, 20th August, 14th September; in 1957, 26th and 27th August; in 1958, 24th August, 7th and 8th September; in 1959, 30th August, 16th September.

Days with very small British-type departures

In 1949, 1st September; in 1950, 5th and 28th September; in 1952, 29th and 30th August, 12th, 14th and 27th September; in 1953, 24th August, 3rd and 9th September; in 1954, 23rd and 27th August, 7th and 18th September; in 1955, 22nd August, 10th September; in 1956, 5th September; in 1957, 28th and 31st August; in 1958, 21st August, 21st September; in 1959, 27th August.

Days with a negligible arrival, anticyclonic weather and easterly winds throughout North Sea

In 1949, 25th and 26th August, 20th and 21st September; in 1950, 1st September; in 1951, 9th September, 5th, 6th and 7th October; in 1952, 15th September; in 1955, 27th August, 8th September; in 1958, 18th September; in 1959, 1st, 6th, 8th and 9th October.

APPENDIX B—SURVEY OF ARRIVALS AT THREE BIRD
OBSERVATORIES ON THE EAST COAST OF ENGLAND,
20TH AUGUST-10TH OCTOBER 1949-1959, IN ALL TYPES
OF WEATHER EXCEPT ANTICYCLONIC WITH EASTERLY
WINDS THROUGHOUT THE NORTH SEA

The weather-types in the following sections have been numbered as in Table III, and they start with type ii since type i was described in the ext. To save space, the term "arrival" means a Continental-type arrival, and no comments have been given for the days with British-type departures. Small and very small arrivals have been combined under the term "small". The weather data from the stations in south Norway and north-west Denmark have been referred to as from the "northern North Sea" though strictly north-eastern. The wind-speed is always that at 900 metres above Norfolk in the morning. The days with fog, rain or total cloud are all noted, being scored as " $\frac{1}{2}$ " each when two of them were recorded by adjacent stations on the same occasion, while the days when none of them were recorded are unspecified. To make for easier reading, I have normally placed first in each section any factors that had a suggestive influence.

i) *Anticyclonic with light variable or N wind in northern and E wind in southern North Sea* much less favourable than type i weather, as the 22 days included only one big and three moderate arrivals, probably not because of the absence of westward drift in the northern North Sea, but because of the very light winds in the southern North Sea. The mean speed for the twelve days with E to SSE winds was 12 knots, maximum 18 knots (*cf.* a mean of 20 knots for big and moderate arrivals in type i weather), but for the one big and three moderate arrivals in type ii weather, the

mean wind-speed was only 9 knots. On eight days the wind was SE in the southern North Sea, including the one big and two of the moderate arrivals; the wind was E for the other moderate arrival and on one other day, and NE on twelve days. In the northern North Sea fog occurred on three days, including the big arrival and one moderate arrival, and total cloud occurred for one moderate and one negligible arrival. In the southern North Sea fog occurred for two small and two negligible arrivals, rain for two negligible arrivals, and total cloud for one moderate and one small arrival.

(iii) *Anticyclonic with E wind in northern and W wind in southern North Sea*

About as favourable as type ii, since the 20 days included one big and two moderate arrivals. On 17 days with SW wind in the southern North Sea, its mean speed was $5\frac{1}{2}$ knots for the two moderate arrivals, 10 knots for the five small ones and $18\frac{1}{2}$ knots for the ten negligible ones. On the other three days the wind in the southern North Sea was NW for two negligible arrivals and one big one (with a speed of 13 knots). In the northern North Sea the wind was SE on 15 nights, including both moderate and four small arrivals, and E on five nights, including one big and one small arrival; fog occurred for $1\frac{1}{2}$ small and two negligible arrivals, rain for one small and $\frac{1}{2}$ negligible one, total cloud for the one big, both moderate, $1\frac{1}{2}$ small and $5\frac{1}{2}$ negligible ones. In the southern North Sea fog occurred for $1\frac{1}{2}$ moderate, three small and two negligible arrivals, rain for two negligible ones and total cloud for the one big, $\frac{1}{2}$ moderate, one small and five negligible ones.

(iv) *Anticyclonic with W wind in northern and E wind in southern North Sea*

Less favourable than types ii or iii, for the 29 days included no big and only two moderate arrivals, again probably not because there was no westward drift in the northern North Sea, but because of the very light wind in the southern North Sea. The mean for 18 mornings with an E to SSE wind was only 11 knots, maximum 17 knots. In the northern North Sea the wind was nearly always NW, but between W and SW for one small and six negligible arrivals; fog occurred for only $\frac{1}{2}$ small and $2\frac{1}{2}$ negligible arrivals, rain for one negligible one and total cloud for both moderate, $4\frac{1}{2}$ small and $10\frac{1}{2}$ negligible ones. In the southern North Sea fog occurred for two small and $1\frac{1}{2}$ negligible arrivals, rain for one small and $1\frac{1}{2}$ negligible ones and total cloud for five negligible ones. The wind was nearly E at 5-10 knots for both moderate arrivals, and equally often NE, E and SE for the small and negligible ones. There seemed nothing distinctive about the weather for the two moderate arrivals.

(v) *Anticyclonic with W wind throughout North Sea*

Negligible arrivals on all 20 days, possibly due partly to the absence of westward drift though other factors were certainly involved. On five nights the wind in southern Scandinavia was SW and therefore warm, which is normally unfavourable for autumn departures; it was also strong in the southern North Sea. On the other 15 nights the wind in southern Scandinavia was NW, so presumably rather cold, and big departures from there presumably occurred. But on nine of them the wind in the southern North Sea was extremely light, only 2-7 knots at 900 metres, and the mean for all 15 days was only 9 knots. Further, on some of these days, notably six in September 1959, extremely small arrivals took place at the observatories; this suggests that Continental migrants were coming in but that most did not stop at the coast, a suggestion fully corroborated by radar. On only two of these 15 mornings was the wind in the southern North Sea NW, at 16-24 knots, which might perhaps have drifted migrants away from England, while on two more it was SW at 17 knots. Round the northern North Sea fog occurred on $3\frac{1}{2}$ nights and total cloud on $5\frac{1}{2}$. Round the southern North Sea fog occurred on three mornings, rain on one and total cloud on six.

(vi) *Transitional with E wind throughout North Sea*

Slightly more favourable than any except type i, for the 25 days included one big and five moderate arrivals. The big arrival, with extremely light winds, was described in the text and Table II; since the circumstances were so unusual it is unfortunate that only Spurn was manned that day. In the southern North Sea the wind was SE or SSE on 15 mornings, which included all five moderate arrivals (mean speed 10 knots) and six of the seven small ones (mean speed 17 knots), but only four of the nine negligible ones (mean speed 17 knots); on the rest it was NE or NNE. In the northern North Sea the wind was SE for three moderate, three small and three negligible arrivals, E for one moderate and one small one and NE for one moderate, three small and six negligible ones. In the northern North Sea fog occurred for two small arrivals, total cloud for the one big, two moderate, four small and five negligible ones. In the southern North Sea fog occurred for one moderate, $2\frac{1}{2}$ small and one negligible arrival, rain for $1\frac{1}{2}$ small and one negligible one, total cloud for two moderate, two small and four negligible ones.

(vii) *Transitional with light variable wind in northern and E wind in southern North Sea*

Only two days; one moderate arrival occurred with a 4-knot ENE wind and fog in the southern North Sea, and total cloud in the northern North Sea, one negligible arrival with fog in the northern North Sea and an 8-knot SE wind in the southern North Sea.

(viii) *Transitional with E wind in northern and W wind in southern North Sea*

The 16 days included one moderate arrival with SE wind and fog in the northern North Sea and a 5-knot SW wind and total cloud in the southern North Sea. One small arrival, presumably Continental as it occurred at Cley as well as Spurn, took place with SE wind and total cloud in the northern North Sea and frontal rain with a 30-knot SW wind over the Norfolk coast. The other occurred with a NE wind and total cloud in the northern North Sea and NW wind and total cloud in the southern North Sea. The ten days with negligible arrivals and the three with "B" movements included five with a NE wind in the northern North Sea and a NW wind further south, and eight with a SE wind in the northern North Sea and a SW wind further south; in the northern North Sea fog occurred with two, rain with two, and total cloud with seven, and in the southern North Sea fog occurred with one, rain with one and total cloud with five.

(ix) *Transitional with W wind in northern and E wind in southern North Sea*

The eleven days included only three small arrivals, all with NW wind in the northern North Sea, two with SE and one with NE wind further south. Hence in transitional as in settled and disturbed weather, arrivals were commoner with an easterly wind in the northern and a westerly wind in the southern North Sea, than with the reverse. For the negligible arrivals, the wind in the northern North Sea was NW for six and SW for two, in the southern North Sea NE for five and SE for three. In the northern North Sea, fog occurred with $\frac{1}{2}$ negligible arrival, rain with one small one and total cloud with $6\frac{1}{2}$ negligible ones, and in the southern North Sea fog occurred with $2\frac{1}{2}$ negligible arrivals, rain with two small and two negligible ones and total cloud with $1\frac{1}{2}$ negligible ones.

(x) *Transitional with W wind throughout North Sea*

The 77 days included 64 with negligible arrivals and another eight with purely British movements. Further, one of the two moderate movements, recorded only at Spurn, was probably a redetermined departure, since it was primarily of Pied

Flycatchers and occurred with a 30-knot SSW wind only three days after a larger arrival there of the same species. But the other moderate arrival was presumably genuine, as it consisted primarily of Redstarts and Robins, with one Pied Flycatcher, and there were no Continental arrivals in eastern England during the preceding fortnight; the wind was light NW throughout the North Sea, of 13 knots above Norfolk; no overcast was recorded. There was also one small arrival with a light SW wind and two with fairly strong NW winds, one of the latter occurring at Cley, where British departures were hardly ever seen; there was total cloud in the northern North Sea for one of these and in the southern North Sea for another. For the 64 negligible arrivals the wind was north of west in the northern North Sea for about 38 and in the southern North Sea for about 27, while total cloud, rain or fog was recorded in the northern North Sea for 44 and in the southern for 25.

(xi) *Disturbed with E wind in North Sea*

The six days included one moderate arrival with E wind and rain in the northern North Sea and a wind just N of E and rain in the southern North Sea, with a depression in the North Sea moving east during the night; also one very small arrival in clear weather with NNE winds; and four negligible arrivals, all with SE winds and rain in the northern North Sea and with winds between NE and S, three of them with total cloud in the southern North Sea.

(xii) *Disturbed with E wind in northern and W wind in southern North Sea*

58 days, of two kinds. On 36 days the wind was SE in the northern North Sea and SW in the southern, and these included one moderate arrival against a 15-knot SW wind, but otherwise only one very small passage with a strong SW wind which was probably a British departure. On the other 22 days the wind was NE in the northern North Sea and NW in the southern, with a depression in the North Sea moving east during the night—the “cyclonic approach” of observatory workers—and these included two moderate and two small arrivals. Similar weather, with easterly winds to the north of a depression moving east in the North Sea at night and a NW wind in the southern North Sea next morning, also occurred on three days with more settled type-iii conditions and included one big arrival; and the same weather occurred for one negligible arrival with type-viii conditions, as well as for the one moderate arrival with type-xi conditions (except that on the last occasion the wind had not yet reached NW by the early morning). Hence there were in all 27 days with this type of weather, which included one big, three moderate and two small arrivals. On the 58 days of type-xii weather, fog, rain or total cloud was recorded in the northern North Sea almost every night, though not for one moderate arrival, and in the southern North Sea for about half the mornings, including two moderate and one of the small arrivals.

(xiii) *Disturbed with W wind in northern and E wind in southern North Sea*

The four days included one very small and two negligible arrivals.

(xiv) *Disturbed with W wind throughout North Sea*

Out of 218 days there were negligible arrivals on 153 and purely British-type departures on 37 (together 87%); but also three moderate, ten small and 15 very small arrivals that included typical Continental migrants. The moderate arrival on 10th September 1949, with moderate SW winds throughout the North Sea, was presumably a British-type departure from England that included a few Redstarts, a Bluethroat and an Aquatic Warbler that had entered the country on the big Continental arrival three days earlier. The moderate arrival on 6th October 1950 occurred with strong SW winds (40 knots above west Norfolk), but since it included

many Golderests and several Pied Flycatchers, and there had been no sizeable arrival of either species in the preceding month, it was presumably from the Continent. The other moderate arrival, on 12th September 1954, included a few Redstarts, Garden Warblers and Pied Flycatchers, and was almost certainly from the Continent, as it was recorded at all three observatories, including Cley, where British departures were very rare; and further there had been no big or moderate Continental arrival on the east coast in the previous three weeks. It occurred with a 20-knot W wind above east Norfolk and, for both this and the moderate arrival in 1950, total cloud was recorded in the northern but not the southern North Sea. Although the other 25 arrivals were small and very small, the frequency with which, and the circumstances in which, they occurred make it extremely unlikely that most of them were redetermined departures, and this particularly applies to the seven between 29th August and 17th September 1957, discussed in the text. There was total cloud in the northern North Sea for nearly all these arrivals, and in the southern North Sea for nearly half of them, and total cloud was also frequent with negligible arrivals.

Studies of less familiar birds

106. Lesser Grey Shrike

By I. J. Ferguson-Lees

Photographs by Eric Hosking and K. Koffán

(Plates 50-54)

WHEN THE FIRST VOLUME of *The Handbook* was published in 1938, only 22 records of the Lesser Grey Shrike (*Lanius minor*) in the British Isles were admitted and five of those cannot now be accepted. Only 17 Lesser Grey Shrikes in nearly a hundred years since the first was identified in 1842—yet from the autumn of 1952 to the spring of 1960 at least 13 well-authenticated occurrences have taken place, a third of these being trapped and ringed. In 1958 two were recorded (*Brit. Birds*, 53: 171) and, although there was none in 1959, there have already been two this year. This is yet another illustration of the way in which the greatly increased ranks of competent observers and ringers have shown birds formerly regarded as extremely rare vagrants to be of almost annual occurrence.

In this country we tend to think of the Great Grey Shrike (*L. excubitor*) as a northern breeder which comes to us in winter, and of the Lesser Grey as a southern species. In fact, however, the former with its much vaster range extends considerably further south (as well as north), while the Lesser Grey nests or has nested in the east Baltic states and north-west Russia at 59°N, on the same latitude as Orkney. Its normal breeding range is from NE Spain (Costa Brava) and central and southern France eastwards through Germany, Czechoslovakia and Poland. However, in much of this area it is greatly outnumbered by

the Great Grey and it is in SE Europe—Italy and more particularly the Balkans and southern Russia—that it really comes into its own. In Bulgaria, where most of these photographs were obtained, it is a widespread bird that one sees continually along the telegraph wires. It appears to extend north to about 55° in European Russia and to about 53° - 56° in Siberia, while its southern limits are Turkey and northern Iran; eastwards it reaches the upper stretches of the Rivers Ob and Irtysh in the Altai region.

The range of the Lesser Grey Shrike is thus about 1,500 miles at most from north to south and something over 4,000 miles from west to east—nothing like the round-the-world, four-continent distribution of the Great Grey. However, it is much more migratory than the larger species, being a summer-visitor throughout its range and wintering in Africa, largely south of the Equator.

The Lesser and Great Grey Shrikes are easily confused by the unwary, especially if the observer has no previous experience of the former and only a limited acquaintance with the latter. The notorious "Berkhamsted Grey Shrike" was a case in point: a bird regularly watched by experienced observers in March and April 1940, and again in the winters of 1940-41 and 1941-42, was identified by all concerned as *L. minor* until in February 1942 it was seen by the late B. W. Tucker in company with H. G. and W. B. Alexander and shown by them to be an aberrant and probably rather small Great Grey (*Brit. Birds*, 34: 17 and 178; and 36: 51-53). This case is probably unknown to many of the post-war generation of bird-watchers and the warning it gave is not always heeded, judging by some dubious-looking records in county reports.

The most recent identification books still tell us that the Lesser Grey Shrike is separated by its smaller size, broad black face-markings continuing across forehead, pink under-parts, lack of white superciliary, and broad wing-bar—but size, as a start, is unreliable unless a direct comparison is possible. The black forehead of the adult male is sharp and clear (plate 51a), but the female's is browner and mixed with grey even in the breeding season (plates 49, 52a, 54a) and some adult females in winter have almost no dark colour on the forehead at all, this being confined to a few spots (e.g., *Brit. Birds*, 50: 397). Females and first-winter birds make up the bulk of the Lesser Greys recorded here in autumn and the latter have no black whatsoever on the front of the head; this is illustrated by plate 51c since the first-winter head-pattern is often similar to the juvenile, but it is better shown by an earlier photograph (*Brit. Birds*, 46: plate 31b) of an immature in Northumberland in September 1952 (a curious bird that later fell down a chimney in Aberdeen!). The last point to bear in mind on the face-pattern is that fact that some less clearly marked Great Greys seem to show a dark forehead at certain angles, as was the case at Berkhamsted. The exact

distribution of black on the Lesser Grey is perhaps best shown in plate 52c which is worth comparing with plate A40.*

To look for a moment at some of the other oft-quoted field-characters, pink under-parts are just as much a feature of the Great Grey Shrikes of southern Europe (*L. e. meridionalis*) and of some individuals of the typical race in northern Europe, and so they alone are of little value. The lack of a white superciliary is a useful point (compare plate 50 etc. with plates A37, A39b and A40), but it is important to remember that in juvenile Great Greys the superciliary is often small or absent (plate A38b) and that it may still be small or almost absent in first-winter birds and some adults (Berkhamsted again). Lastly, while the white wing-bar of the Lesser Grey Shrike is always broad and confined to the bases of the primaries (plates 51a and 52b), that of the Great Grey is very variable in different parts of its range. Most of the Great Greys that appear in this country have a long, narrow bar that is distinctively spread across the bases of the outer secondaries as well as of the primaries (plate A39b), this forming a double patch on the closed wing; but southern populations (e.g. *meridionalis*) have the white confined to the primaries like the Lesser Grey does and in southern Asiatic birds this patch may be as broad as in any of the latter species (see plate A41a, illustrating the wing of *L. e. pallidirostris*). Thus, to sum up, all these commonly quoted points need to be used with caution and only one of them, the black forehead, is entirely conclusive by itself *when present and when the observer can be certain that no trick of the light is involved*.

What other characters can be used to separate these two species in the field (wing-formula and measurements, of course, leave no doubt in the hand)? In particular, how can one be certain of the identity of immature Lesser Greys in autumn? A plumage feature which is not always given the prominence it deserves is the differing amount of white on the scapulars. The Lesser has some scapular feathers edged white, but the Great Grey's have long white tips. The result is a conspicuous white band between the grey of the back and the black of the wings in the latter species (plates A37 and A40), while the Lesser Grey shows hardly any white at all (plates 50, 52b and 53). The Great Grey may also show a fair amount of white on the rump and upper tail-coverts, which the smaller bird does not. More important, however, is the quite different "jizz" of the two birds—tail-length, stance, wing-proportions and beak-shape. Much of the size difference between the two species lies in the fact that the Lesser Grey's tail averages three-quarters of an inch the shorter. It is an ordinary sort of tail with

*In the next two paragraphs comparison is several times made with the photographs of Great Grey Shrikes that appeared in our series in 1957 (*Brit. Birds*, 50: 250-253, plates 37-40). To avoid the tedium of repeating the full reference, the numbers of those plates are given on their own with the prefix "A".

a fair but not extravagant amount of white at the sides; the Great Grey's is disproportionately long and flaunting, looks unwieldy and is markedly graduated with striking white patches on either side at the tip (compare plates 50, 52 and 53 with A37 and A40). As a result the Great Grey tends to perch in a rather thrush-like way, leaning forward to balance, while the smaller bird has an upright stance, often more so than in the inset on plate 54b. The *Field Guide's* method of illustrating related species in similar postures is therefore misleading here. Next, the wings of the smaller bird are actually directly the longer and, even though the difference is slight, this means that in the Great Grey they seem to meet at the base of the tail (plates A37 and A40), whereas they extend noticeably down it in the Lesser (plates 50, 52b and 54a). Lastly, the Lesser Grey's beak is at once shorter and deeper, looking very stubby (plates 50 and 54a), while the Great Grey's is comparatively long and thin (plates A37 and A38a): this again is surprisingly noticeable in the field.

The Lesser Grey Shrike is primarily, but not entirely, a lowland bird. In Bulgaria we (Guy Mountfort's expedition, 1960) found it in any open country dotted with trees large or small up to 3,000 feet above sea level. It does not live in dense woodland and not much even in open woodland like the Great Grey, Red-backed (*L. cristatus collurio*) and Woodchat (*L. senator*) sometimes do. It is mainly a bird of cultivated areas (particularly where there are orchards and vineyards) and tree-dotted grassland, showing almost a preference for the edges of roads, cart-tracks and paths (plate 54b).

It is not a bush-nester at all and in this is closest to the Woodchat which is likewise primarily a tree-nester, while the Great Grey and Red-backed frequently build in shrubs, bushes and hedges. The type of tree may be anything from a 10-foot roadside sapling to a towering giant five times as high, though in many areas fruit-trees are much favoured. In Germany, Hantge (1957) found most nests in uncultivated fruit-trees—18 in pear, seven in apple, four in plum, three in cherry and one in walnut. K. Koffán (*in litt.* 1957) tells us that in his part of Hungary (Budaörs) the Lesser Grey Shrikes are almost entirely in the vineyards, particularly partly neglected areas dotted with fruit trees; there walnuts are the favourite sites ("probably because they are the tallest"), but the birds also build in pear, almond, cherry and plum. Similarly, three of six nests found in Bulgaria were in fruit-trees. Koffán goes on to add that where acacias grow the Lesser Greys show a great preference for them and often build very high up. In Bulgaria our highest (40 feet) and lowest (7 feet) nests were both in acacias, the latter in an 11-foot sapling by a main road. These extremes are both outside the range of 10-30 feet given in *The Handbook* and this aspect clearly varies in different parts of Europe. Niethammer (1937) gives

7 to 9 metres (about 23 to 29½ feet) as the rule in Germany, but, near Heidelberg, Hantge (1957) found the average height of 33 nests to be 3.9 metres (roughly 12¾ feet) with a range of 2.5 to 7 metres (about 8¼ to 23 feet). Koffán (*in litt.* 1957) states that he has never found a nest in Hungary lower than 3.5 metres (about 11½ feet). The site photographed in Bulgaria was 8 feet high.

Often—and this has been noted by most writers and by us in Bulgaria—there is a tendency for some six or eight pairs to nest fairly close together as if in a loose colony. The same thing happens with Red-backed Shrikes, but not so much with Woodchats and probably hardly at all with Great Greys. The colonies seem to remain fairly constant from year to year and Hantge's paper confirms that individual birds return to a place once they have nested there.

The nest itself (plates 50 and 53) is quite different from the mainly grass and moss structures of the Great Grey and Red-backed species, being more like that of the similarly tree-nesting Woodchat. But for a twig base, it is composed almost entirely of the soft and flexible stalks of various plants, usually with the leaves and flowers still attached. *The Handbook* mentions *Gnaphalium*, *Filago* and *Thymus*, while Koffán says that those most frequently used in Hungary are *Frigeron*, *Arenaria*, *Medicago*, *Achillea*, *Artemisia* and *Capsella*. Twiglets and bents, string, roots, rags, wool, hair and feathers are also woven in, but the plants form the bulk of a structure that is quite large, yet compact and closely knit. It is usually sited in a fork in one of the main branches near the trunk, but may occasionally be well out on quite thin twigs.

Niethammer (1937) and Olivier (1944) give the usual clutch as four or five, sometimes six, exceptionally seven. The full clutches found by Hantge seem to have consisted of six or seven eggs, however, while Koffán states that most of the nests he has found in Hungary have contained six eggs. Three nests in Bulgaria with full clutches had five, six and seven eggs. The first young hatch 15 days after the laying of the last egg, but Hantge considers that the incubation period should more properly be regarded as 16 days since the female starts to sit from the laying of the penultimate egg. The young are generally said to spend 14-15 days in the nest, but Hantge records cases of 18 and 19 days for the fledging period. Both parents feed the young, but at the nest photographed in Bulgaria the male was very shy and would not usually approach while the hide was close to the nest. Incidentally, *The Handbook* states that both sexes build the nest and this is confirmed by Hantge, but he goes on to say that he has never found a male incubating or brooding.

Though the second largest of the four common European shrikes, it is much the least ferocious, both in its feeding habits and towards other birds in its territory, though it will tackle any predator up to the size of a

Buzzard (*Buteo buteo*) if it is threatening the nest. It is almost exclusively insectivorous, with beetles, grasshoppers, mole-crickets, moths and butterflies forming the bulk of its prey; large flies, bumble-bees and millipedes have also been recorded. From its perch it usually flies direct to catch an insect in the air or on the ground, but it will also hover when hunting. Dementiev (1954) mentions land-molluscs among the food in the U.S.S.R. and says that the species will sometimes attack small birds and rodents; and Hantge recorded field voles (*Microtus*) and a musk shrew (*Crocidura*) among the prey (see also Lierath 1954). It does not appear to indulge in the shrike habit of impaling prey in "larders".

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Notes

Curlew Sandpipers wintering in Lancashire.—On 2nd January 1960, I saw a Curlew Sandpiper (*Calidris testacea*) on the mud-flats of the Ribble Estuary at Lytham, Lancashire. On 12th February there were three there and from then until April up to six were seen almost daily by various observers including N. Harwood and P. Carah as well as myself. The birds may also have spent the early part of the winter at Lytham; at least four were seen there during the autumn of 1959 and they could easily have been overlooked afterwards.

The last time any of the party were seen was on 26th April when there were two, but previously they had been missing from the 9th to the 18th and during those ten days a marked change in their appearance took place. On the 8th all were still in full winter plumage, whereas by the 19th four were in almost complete summer dress, though a fifth has only irregular brownish markings underneath and the sixth had not altered. This bird was still unchanged on 26th April when it was one of the last two seen.

K. W. CLEMENTS

[Identification details have been supplied. Curlew Sandpipers are rarely observed in Britain in winter and we know of no previous record of such a party, though several other species of waders, formerly regarded simply as passage-migrants, are now seen to an increasing extent between autumn and spring (e.g., *Brit. Birds*, 49: 167-171; 50: 544; and 51: 525-527).—EDS.]

Huge flock of Grey Phalaropes in the Isles of Scilly.—The Grey Phalarope (*Phalaropus fulicarius*) is an annual visitor to the Isles of Scilly in autumn, its occurrence invariably associated with periods of westerly gales in the Atlantic. At such times single birds and small parties are frequently seen in the bays around the islands, a particularly favoured spot being the area of sheltered water between Wingletang Ledges and Horse Point, the southernmost tip of St. Agnes. An invasion of these birds which took place during October 1959 was, however, quite unprecedented and included a most remarkable flock on the 23rd. An extract from the writer's notebook for that day reads: "The sea around Horse Point was carpeted with phalaropes, the water being a continuously moving mass of birds as party after party flew up to maintain their positions in the currents around the rocks".

In 1959 the first Grey Phalaropes of the autumn were recorded on 9th October when the writer and R. E. Scott saw a party of about 28 off Wingletang Ledges. From the 10th to the 13th small groups were seen off St. Agnes and others were reported by boatmen off Bryher and Tresco and around the Western Rocks. During the 14th-22nd there was a complete absence of records of phalaropes, but at 1500 hours on the 23rd, following several days of continuous westerly winds, an enormous flock was found on the sea just off Horse Point. Several counts were attempted and the flock was cautiously estimated at not less than 350 birds. An hour later the writer returned in company with Miss H. M. Quick and, although the visibility was beginning to fail, the sea was still carpeted with phalaropes. A single Red-necked Phalarope (*Ph. lobatus*) was identified among them. Earlier in the day Miss Quick had seen a party of 27 Grey and three Red-necked Phalaropes off St. Agnes's Cove. On the 24th about 100 phalaropes, including the single Red-necked, were still present off Horse Point, but by the following day only six remained. On the 26th the writer left Scilly and single birds and small parties were seen in St. Mary's Sound and on the Scilly-Penzance crossing, particularly in the area of the Wolf Rock lighthouse. There was a gap in observations during the last few days of October and no phalaropes were seen in the first week of November, but on the 7th K. H. Hyatt and C. A. Walker saw a party of 20 on the sea between St. Agnes and Tresco. The last records of the autumn in the Isles of Scilly were two birds on 11th and 13th November. B. S. MILNE

Woodpigeon nesting on ground.—On 18th September 1959, I was informed by R. Bitmead, of Manor Farm, Cholsey, Berkshire, that two young Woodpigeons (*Columba palumbus*) had been discovered in a nest in oat-stubble on his land a week previously. I visited the site that day and found that the two young, which were almost completely fledged, were lying in a slight depression sheltered by stubble and containing a thick growth of knotweed (*Polygonum aviculare*). There was no sign of any external building material, but from the presence of old droppings and scale-powder I had no doubt that the birds had hatched there. The field is part of an unenclosed arable tract of about 200 acres, bounded by a road, a farm-track and a railway fence. The stubble was about 60 acres in extent and the nest was some 200 yards in from the nearest boundary road. The nearest orthodox tree-site for Woodpigeons was 300 yards away—an avenue of horse chestnuts which is, in fact, habitually used by this species. W. D. CAMPBELL

[R. K. Murton, who has made a special study of this species, informs us that it is not unusual for Woodpigeons to nest on the ground, particularly in areas where the population of them is high, but in such cases there is usually plenty of cover (a bramble thicket, for example) immediately over the nest. One ground-nest in a hazel coppice was not directly protected from above, but in that case the trees were dense and made the site dark. He has never seen a nest on the ground in the open. He adds that ground nests are usually in a scrape and do not often contain much material, though sometimes there is the equivalent of the normal lining to a tree-nest. Derek Goodwin points out that no real change in nesting behaviour, other perhaps than a difference in the number of movements involved, would be necessary for a Woodpigeon to form a scrape on the ground, since scraping actions are a normal part of nest-building in pigeons.—Eds.]

Bee-eaters diving into water.—With reference to the recent notes on this subject (*Brit. Birds*, 53: 130-131 and 221), I can report similar behaviour by Blue-cheeked Bee-eaters (*Merops superciliosus*) and Little Green Bee-eaters (*M. orientalis*) in Egypt. On 10th April 1945 the late R. H. Greaves and I saw a party of 29 Blue-cheeked Bee-eaters near Giza. They were perching on telephone wires 20-30 feet above a canal and from them diving into the water. Sometimes they immersed only their heads and under-parts after hovering a few feet above the surface, but they also often plunged straight down from the wires and submerged almost completely. Although we watched for about 30 minutes, we saw no food being taken from the water. There was, indeed, an abundance of high-flying insects in the area and some of the birds were busily feeding on those. Diving, preening and aerial feeding seemed, in fact, to be the sequence of events and so we concluded that

they were simply bathing in the water. They were very active and I assume the behaviour continued for a considerable time after we left.

The Little Green Bee-eaters were also observed at Giza, on 15th September 1945. There were five of them and they were continually hovering and diving into a small and shallow pool, then returning to an adjacent shrub to preen. Sometimes they actually splashed about on the surface of the water and they were certainly just bathing. Incidentally, I never saw European Bee-eaters (*M. apiaster*) diving, although these birds are plentiful on passage in Egypt and often skim down to the surface of water to drink.

C. A. WHITE

Recent reports and news

By I. J. Ferguson-Lees and Kenneth Williamson

The items here are largely unchecked reports, and must not be regarded as authenticated records. They are selected, on the present writers' judgment alone, from sources generally found to be reliable. Observers' names are usually omitted for reasons of space and in case a report is subsequently rejected, and none of the items will be mentioned in our annual Index. Readers are asked to submit anything of interest as quickly as possible.

This summary is mainly concerned with the second half of July and the first three weeks of August. It thus deals with the chief excitements of the opening phase of the autumn, though we mentioned some early wanderers and the beginning of the return wader passage in the last issue (pp. 367-368).

EARLY VAGRANTS FROM THE NEARCTIC

Contrary to the usual position (see, for example, pp. 369-378), this period brought an early fall of birds from the other side of the Atlantic. There were three Pectoral Sandpipers (*Calidris melanotos*) about the end of July and later a fourth was found, while the more or less simultaneous and equally early arrival of three Sabine's Gulls (*Nema sabini*) suggested that they too had come from the New World—northern Greenland or arctic Canada—rather than Spitsbergen or Siberia. The first two Pectorals were in the south-east, at Stoke (Kent) and Perry Oaks (Middlesex) on 24th-25th and 29th-30th July respectively, the descriptions suggesting different individuals. Next, soon afterwards, one was found on the Dee estuary at Shotton Pools (Flint): it remained from 31st July or 1st August until at least the 13th and was seen by many people. Finally, what was considered to be a more boldly marked and therefore different bird was observed two miles away on the Cheshire side of the Dee on 17th August. The Sabine's Gulls were at Teesmouth (Co. Durham) on 24th July and 1st-2nd August and at Cley (Norfolk) on the 3rd. (In late August more Pectorals and Sabine's Gulls appeared; these will be detailed next month.)

OTHER RARE SPECIES

Among the other rarities of the period were waders, terns, gulls, birds of prey, a goose and a pelican of as yet uncertain origin, and several Passerines, mainly warblers. A Black-winged Stilt (*Himantopus himantopus*), thought to be a second-year bird, was located on Porlock Marshes (Somerset) on 23rd July and was still here in early August; from 3rd to at least 25th August another immature stayed at Wareham sewage-farm (Dorset). An adult Caspian Tern (*Hydroprogne caspia*) at Benacre (Suffolk) on 21st July is supported by full details, but not so the only report

of a White-winged Black Tern (*Chlidonias niger*) and we must confine ourselves to mentioning that we have received an unconfirmed observation of one in the south-east. Several Mediterranean Black-headed Gulls (*Larus melanocephalus*) have included an adult moulting from summer plumage at Selsey Bill (Sussex) on 30th July and what was almost certainly the same individual at the same place on 6th and 7th August; an adult in full summer plumage at Langstone Harbour (Hampshire) on 31st July; a "near adult" at Portland Bill (Dorset) on 21st August; and single adults at Hartlepool (Co. Durham) and the Naze (Essex) from 6th and 20th August onwards; respectively. The last two individuals have now appeared in five consecutive autumns (e.g. *Brit. Birds*, 53: 166). A Spotted Crake (*Porzana porzana*) was seen by a large number of observers at Shotton Pools (Flint) during the week following the 6th. There were two or three reports of Kites (*Milvus milvus*) outside Wales—single birds at Adhurst St. Mary, near Petersfield (Hampshire), on 14th July and at Ainsdale Dunes, near Southport (Lancashire), on 21st August, and a second-hand observation of two at Darlington (Yorkshire) at the end of July. On the other hand, the only Ospreys (*Pandion haliaëtus*) reported away from the Scottish breeding area during the period under review were at Teesmouth (Co. Durham) on 24th July, over the River Camel (Cornwall) on 11th and 12th August and at the mouth of the River Ythan (Aberdeenshire) on the 15th.

A Red-breasted Goose (*Branta ruficollis*) which was found at Encombe, near Corfe Castle (Dorset), on 17th August, and which was still present four days later associating with a flock of Herring Gulls (*L. argentatus*), was a most extraordinary occurrence. All the 15 accepted records of this species in Britain have been between October and March, and so one is tempted to dismiss this one as an escape without further ado. It was, however, described as very wild, taking flight if approached to within 200 yards. Enquiries remain to be made and the same applies in connection with the interesting observations of a pelican (*Pelecanus* sp.) at Witton-le-Wear, near Bishop Auckland (Co. Durham), for much of July up to the 30th and at the Isle of May (Fife) on 9th August. The descriptions tally reasonably well and it seems probable that the same individual was involved. The Durham bird was identified as an immature Pink-backed Pelican (*P. rufescens*), an African species which is hardly likely to reach this country in a wild state. Other birds of more or less suspect origin seen during the period included a female Red-crested Pochard (*Netta rufina*) at Locko Park, Spondon, near Derby, from 23rd July to at least 25th August, and a male Red-headed Bunting (*Emberiza bruniceps*) at Gillingham (Kent) on 21st August.

But the rarer Passerines have mainly been species which the systematic trapping of recent years has shown to be annual wanderers. Two Woodchat Shrikes (*Lanius senator*) were ringed at St. Agnes (Isles of Scilly) during August, and an Icterine Warbler (*Hippolais icterina*) which was found at Blakeney Point (Norfolk) on the 6th was trapped on the 7th and last seen on the 8th. While the Icterines appear on the east coast, we expect the Melodious Warblers (*Hippolais polyglotta*) in the Irish Sea area and one was caught at Bardsey Island (Caernarvonshire) on the 17th; there has been at least one there every year since 1954 and the total ringed at the observatory is now ten. The first Barred Warbler (*Sylvia nisoria*) to be reported this autumn was caught at Gibraltar Point (Lincolnshire) on 21st August. A Bonelli's Warbler (*Phylloscopus bonelli*) claimed at Farcham (Hampshire) on 27th and 28th July was not trapped, however.

FURTHER INTERESTING FEATURES OF EARLY AUTUMN

Not many Hoopoes (*Upupa epops*) were seen during the period, in contrast to the good numbers during May-June (*Brit. Birds*, 53: 318-319, 368). Occurrences near Ashford (Kent), at Dungeness (Kent) and near Ystrad Ffin (Carmarthenshire), on 28th, 30th and 30th respectively, suggest that the first ones of the autumn started to

30 through at about the end of July, when there was also the first real sign of Passerines on the move. Since then, however, the only reports have been from south coast counties. Incidentally, we learn that a Hoopoe spent much of May, June and July on Dowrog Common, near St. David's (Pembrokeshire).

Records of Avocets (*Recurvirostra avosetta*) included one at Steart Point (Somerset) on 24th and 28th July and 14th August. On the first two dates a Spoonbill (*Platalea minor*) was also present and it or another was seen on the River Parrett at West Huntspill (Somerset) on 2nd August. The only other Spoonbill reported away from the east coast during the period was at Langstone Harbour (Hampshire) from 3rd to 4th July. Among the numerous records of Little Gulls (*L. minutus*) we might mention a juvenile which stayed on the Dee estuary at Shotton Pools (Flint) for several days from 6th August and was joined by an adult on the 11th, the latter remaining until the 17th at least: the species is unusual in the north-west. Inland observations of Common Scoters (*Melanitta nigra*) at Pitsford Reservoir (Northamptonshire) and Lolme Pierrepont (Nottinghamshire) on 6th August (the latter still present on the 11th) may perhaps have been connected. On the 16th Pitsford Reservoir also produced a Marsh Harrier (*Circus aeruginosus*), an unusual visitor to the Midlands.

Last month (p. 368) we referred to the early start to the wader passage and we thought then that it might be a fairly good year for the northern marsh-nesting species. This seems to have been borne out during August. From an as yet inadequate amount of information it appears that Wood Sandpipers (*Tringa glareola*) have been passing through in good numbers and that Little Stints (*Calidris minuta*), Curlew Sandpipers (*C. testacea*) and Spotted Redshanks (*T. erythropus*) are well represented. The last week of July, and the 3rd-10th, the 12th-15th and the beginning of the fourth week of August stand out as times of passage. Wood Sandpipers on the Dee estuary (Flint/Cheshire) rose to as many as nine on the 10th-11th after six on the 9th, an unusual number for the north-west. At the same time one Wood Sandpiper got as far as Cape Clear Island (Co. Cork) on 6th August and remained for several days; this was the first record for the county and the species is scarce in Ireland generally (though not as rare as was formerly thought to be the case). In our previous summary we referred to the occurrence of one or two single Little Stints in the early passage at the end of June, but we now learn that no less than three together were seen at Hickling Broad (Norfolk) on the 26th.

Throughout the period (particularly during the fortnight around the turn of the month) Black Terns (*Chelidonias niger*) were reported in small numbers from many parts of the country as far north as Shropshire, Nottingham, Yorkshire and Co. Durham, but there was no suggestion of any large-scale movement until the last five days of August when many were seen in the east and south of England. As there appear to be very few records of this species for Inner London, however, we might perhaps mention the occurrence of one in summer plumage at Westminster Bridge on 29th July.

OUT-OF-SEASON BIRDS AND COLLARED DOVES

We have only recently learnt that a pair of Little Bitterns (*Ixobrychus minutus*) appeared at a locality in Huntingdonshire on 26th June. The two birds were observed regularly for the next ten or fourteen days, after which the male alone was in evidence until 19th July. No more was then seen of either.

Last month (p. 367) we mentioned summering by Little Gulls in Scotland and so it is not out of place to include reference to an immature which stayed at Farlington Marshes (Hampshire) from the beginning of May to at least 6th August. Iceland Gulls (*L. glaucoideus*) in summer are no longer as remarkable as they once seemed, particularly since an immature took up more or less permanent residence in the area of Southwick and Shoreham (Sussex) from January 1958 (*Sussex Bird Reports* 1958 and 1959; *Brit. Birds*, 51: 132, 207, 251, 282, 444 and 530; 52: 68 and 440);

however, we should mention a second-year bird which has been seen at intervals since late March on the Dee estuary (Flint/Cheshire border) and which was still present on 6th August. Three Shags (*Phalacrocorax aristotelis*) spent the summer at King George VI Reservoir (Middlesex), an unusual inland record (see also *Brit. Birds*, 53: 280 and 320). Even more curious are two records of Black-throated Divers (*Gavia arctica*) summering on English reservoirs, at Cannock (Staffordshire) and Hanningfield (Essex); the former was described as an immature bird, the latter as an adult in winter plumage. An immature Goldeneye (*Bucephala clangula*) near Durham on 5th August was another winter visitor at an unusual date; what was presumably the same bird was then seen at Hurworth Burn Reservoir from the 10th to the 13th. Finally, a Redwing (*Turdus musicus*) spent the summer at Beddington sewage-farm (Surrey), being seen from May to July; it may be recalled that in 1959 a Fieldfare (*T. pilaris*) did likewise.

Reports of Collared Doves (*Streptopelia decaocto*) continue to come in. Among the most interesting of those recently received are two from different localities in Cheshire, the first of a single bird in June and July and the second of two birds from 20th July into August.

LATE NESTING OF THRUSHES

From counties in central England—Oxford, Warwick, Nottingham, Lincoln, Suffolk, Bedford, Hertford, Buckingham and Surrey—come reports of late nests of Song Thrushes (*Turdus philomelos*) and Blackbirds (*T. merula*) with eggs in August, by which time these two species have usually finished nesting. We hope that any other records will be sent to H. Mayer-Cross, B.T.O., 2 King Edward Street, Oxford.

Requests for information Committee on toxic chemicals

A Joint Committee of the Royal Society for the Protection of Birds and the British Trust for Ornithology has now been formed, under the Chairmanship of Stanley Cramp, to study the effects of toxic chemicals on birds. The Committee is anxious to obtain any evidence of birds being killed by agricultural chemicals used in sprays or seed dressings. The basic information needed is the date and locality of each kill, the species and number of birds affected, and the chemical used. The Committee would, however, appreciate prompt notification of any birds whose deaths are thought to be due to such chemicals so that, if necessary, corpses may be collected for analysis. All information should be sent to the Secretary of the Committee who is P. J. Conder, The Royal Society for the Protection of Birds, 25 Eccleston Square, London, S.W.1.

Whooper Swan enquiry 1960-61

The British Trust for Ornithology and the Wildfowl Trust have agreed jointly to conduct an enquiry on the Whooper Swan (*Cygnus cygnus*) this coming winter. The purpose of the enquiry is to ascertain (a) status and distribution, (b) proportion of young in wintering herds, (c) dates of arrival and departure, and (d) general feeding habits in relation to agricultural crops. To supplement the regular Wildfowl Counts, observers are asked to make counts of Whooper Swans as frequently as possible and in as many areas as possible. Careful observations of feeding habits are particularly wanted, especially in the spring. The organiser is Miss Betty Garden, Eider Cottage, Newburgh, Aberdeenshire, from whom copies of a questionnaire may be obtained.

Notice to Contributors

British Birds publishes material dealing with original observations on the birds of Britain and western Europe, or, where appropriate, on birds of this area as observed in other parts of their range. Except for records of rarities, papers and notes are normally accepted only on condition that the material is not being offered to any other journal. Photographs (glossy prints showing good contrast) and sketches are welcomed. Proofs of all contributions accepted are sent to authors before publication. After publication 20 separates of papers are sent free to authors; additional copies, for which a charge is made, can be provided if ordered when the proofs are returned.

Contributors are asked to observe the following points, attention to which saves the waste of much editorial time on trivial alterations:

1. Papers should be typewritten with double spacing, and on one side of the sheet only. Shorter contributions, if not typed, must be clearly written and with similar spacing. Failure to help in this way may result in delays to publication.

2. Notes should be worded as concisely as possible, and drawn up in the form in which they will be printed, with signature in block capitals and the writer's address clearly written on the same sheet. If more than one note is submitted, each should be on a separate sheet, with signature and address repeated. In the case of rarity records, any supporting description which is too detailed for publication should be attached separately.

3. Certain conventions of style and layout are essential to preserve the uniformity of any publication. Authors of papers in particular, especially of those containing systematic lists, reference lists, tables, etc., should consult the ones in this issue as a guide to general presentation. English names of species should have capital initials for each word, except after a hyphen (e.g. Willow Warbler, Black-tailed Godwit), but group terms should not (e.g. warblers, godwits). English names are those used in *The Handbook of British Birds*, with the exception of the changes listed in *British Birds* in January 1953 (46: 2-3). The scientific name of each species should be given (in brackets and underlined) immediately after the first mention of the English name. Subspecific names should not be used except where they are relevant to the discussion. It is sometimes more convenient to list scientific names in an appendix. Dates should take the form "1st January 1960" and no other, except in tables where they may be abbreviated to "1st Jan.", "Jan. 1st", or even "Jan. 1", whichever most suits the layout of the table concerned. It is particularly requested that authors should pay attention to reference lists, which otherwise cause much unnecessary work. These should take the following form: TUCKER, B. W. (1949): "Species and subspecies: a review for general ornithologists". *Brit. Birds*, 42: 129-134.

4. LITHERBY, H. F. (1894): *Forest Birds: Their Haunts and Habits*. London. p. 34. Various other conventions concerning references, including their use in the text, should be noted by consulting examples in this issue.

Tables should be numbered with Roman numerals, and the title typed above in the style used in this issue. The title and any headings within the table should not be underlined, because this sometimes makes it difficult for the editor to indicate the type to be used. It is most important that the layout of each table should be carefully planned with an eye to its final appearance; above all, it should be borne in mind that tables must either fit into the width of a page, or be designed to fit a whole page lengthways. All tables should be self-explanatory.

Figures should be numbered with Arabic numerals, and the captions typed on a separate sheet. All line-drawings should be in Indian ink on good quality drawing paper (not of an absorbent nature) or, where necessary, on graph paper, but this must be light blue or very pale grey. It is best if maps, graphs, etc., are drawn twice the size of the final reproduction (ideally, therefore, for the normal 4" width the original should be 8" wide); sketches of birds, however, should be only slightly larger than the size at which it is intended they should appear. It is always most important to consider how each drawing will fit into the page. The neat insertion of lettering, numbers, arrows, etc., is perhaps the most difficult part of Indian ink drawing and, unless he has had considerable experience of this kind of work, an author should seek the aid of a skilled draughtsman.

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OCTOBER 1960



Report on rare birds in Great Britain and Ireland in 1959 (with 1958 additions)

*Compiled by G. A. Pyman
on behalf of the Rarity Records Committee*

SINCE THE PUBLICATION of our first report, dealing with 1958 occurrences (*Brit. Birds*, 53: 153-173), we have continued with the task of considering records for 1959. The complete list of species with which we are concerned was published at the time of the announcement of the formation of the Rarity Records Committee (*Brit. Birds*, 52: 41-244), except that the Sabine's Gull (*Xema sabini*) was afterwards added, as from the beginning of 1959 (*Brit. Birds*, 53: 95).^{*} In addition, we also aim to include certain well-defined races of equal rarity.

For 1959 we have reached a decision on all but 12 of the 400 or so such records which were known to the editors of the various national and county publications and have been reported to us (though we are also aware of some 18 records which we have not been able to include because we have not yet received any details). Those accepted form the bulk of the present report. However, it also contains a short section of additions and corrections to the 1958 report. When it went to press, 27 records remained undecided and all but five of them have now been cleared: those accepted are published here, together with four 1958 records of which we had not previously received details. In all, there remain about 13 records for 1958 and about 30 for 1959 still to be considered, mostly because we have not yet received sufficient evidence (or, in many cases, any at all).

As consideration of 1959 records has extended over the whole of the period since its formation, it is necessary to recite once more the

^{*} Although they have not been considered by this Committee and cannot therefore be regarded as accepted by it, it is worth drawing attention to the fact that the 1958 records of Sabine's Gull were recently listed in the paper on "Nearctic birds in Great Britain and Ireland in autumn 1958" (*Brit. Birds*, 53: 373).—EDS.

membership of the Committee as originally constituted (in June 1959) and the changes which have since been made in it. When first appointed, it consisted of P. A. D. Hollom (Chairman), G. A. Pymar (Hon. Secretary), H. G. Alexander, I. J. Ferguson-Lees, D. D. Harber, A. Hazelwood, H. P. Medhurst, Prof. M. F. M. Meiklejohn, Major R. F. Rutledge (Irish records only) and Kenneth Williamson. In November 1959, however, H. P. Medhurst went abroad and was replaced by Dr. I. C. T. Nisbet and subsequently, in January 1960, H. G. Alexander left the country temporarily and his place was taken by K. D. Smith.

In our first report we went to some length to enumerate the principles by which we had been guided and to explain the procedure adopted in considering records. These still apply in all respects though we do not propose to burden our readers by recapitulating them. We would, however, like to stress how important it is that we should be given an opportunity of considering the observer's *original notes*, as distinct from an edited or abridged version, particularly in the cases of records which come to us through county and other regional organisations. There is no satisfactory substitute for an original account. From it the adjudicator can often gain an insight into such things as the experience of the observer, the conditions in which the observation was made and the methods of identification—things which can make or break a record. We would, therefore particularly ask regional recorders always to provide us with the original documents (or copies of them); these we undertake to return if requested to do so, once the record has been considered.

The systematic list below is set out in the same way as the 1958 one. The following points, some of which were explained more fully in the introduction to the previous report, should be borne in mind since they show the scope of the information given:

(i) Basic details given for each record are (1) county; (2) locality; (3) number of birds *if more than one*, together with age/sex if known; (4) if trapped or found dead; (5) date or dates; and (6) observer or observers up to three in number, in alphabetical order. Any other relevant information and comments, e.g. on the subject of escapes from captivity, are included in a separate paragraph underneath. Where details of an accepted record do not rule out the (usually extremely remote) possibility of a different species of very similar appearance which is not on the British and Irish list but found in some distant part of the world, this is stated below it.

(ii) Occurrences of species and some well-defined races that have been recorded in Great Britain and Ireland (a) not more than ten times or (b) not at all during the previous 25 years are still published separately in this journal with full descriptions. Such records are, therefore, mentioned only briefly in the systematic list below and cross-referenced to the fuller publication.

(iii) The scientific nomenclature and classification follows that given in the B.O.U. *Check-list of the Birds of Great Britain and Ireland* (1952), with the amendments subsequently proposed in *The Ibis* (98: 157-168). Any sight records of subspecies

(including those of birds trapped and released) are normally referred to only as "showing the characters" of the race concerned.

(iv) No record which would constitute the first for Great Britain and Ireland is published by us, even if we consider it acceptable, until it has been passed by the Records Committee of the British Ornithologists' Union. The only two outstanding records in this category are still under consideration. One of these, however, concerns the specific identification of a dowitcher and is published here under the heading "Short-billed or Long-billed Dowitcher (*Limnodromus griseus* or *scolopaceus*)" in accordance with the special treatment that we have decided to give to indeterminate records of these very similar birds and of one other "species pair"—the Melodious and Icterine Warblers (*Hippolais polyglotta* and *icterina*). In both these cases of two birds of more or less equal rarity and bearing a close resemblance to each other, we are publishing observations which clearly refer to one species or the other without its being possible to say which (*Brit. Birds*, 53: 153-154). Otherwise, this report includes only records which are considered to be specifically certain; no "probables" are admitted.

Once again we wish to express our sincere appreciation of the co-operation extended by the vast majority of local organisations and individual observers who have assisted us in many ways and without whose valued help we could not possibly function effectively. Preliminary work has already begun on our 1960 report which it is our intention to publish as early as possible in 1961. With this aim in view, we very much hope that full details of each occurrence will be sent to the editorial address in Bedford (or to Kenneth Williamson in the case of the observatories) as soon as possible after the event and not held back until the end of the year. We shall also be very grateful if readers will check their records and notify us of any errors in either this report or the previous one.

SUPPLEMENTARY SYSTEMATIC LIST (WITH CORRECTIONS) OF 1958 RECORDS ACCEPTED

Ferruginous Duck (*Aythya nyroca*)

Middlesex: Queen Mary Reservoir, ♂, 8th December (D. W. Taylor).

Red-breasted Goose (*Branta ruficollis*)

[Correction]: The bird previously stated to have been present near Amberley Sussex) from 8th to 15th February (*Brit. Birds*, 51: 193 and 53: 162) actually stayed until the 17th of that month (A. B. Sheldon).

Goshawk (*Accipiter gentilis*)

(elsewhere than in the southern half of England)

Sirkeudbrightshire: Loch Ken, 1st March (C. Cowper, F. Hamilton, K. S. Macgregor).

Lesser Yellowlegs (*Tringa flavipes*)

Devon: Exe Estuary, 10th August (R. G. Adams).

Pectoral Sandpiper (*Calidris melanotos*)

(Correction): The bird trapped at Skokholm (Pembrokeshire) on 26th September (*Brit. Birds*, 53: 165) was actually present from 23rd September to 11th October.

Iceland Gull (*Larus glaucoides*)

Co. Kerry: Tralce, adult showing the characters of Kumlien's Gull (*L. g. kumlieni*), the race of the Iceland Gull which breeds on Baffin Island in arctic Canada, 10th January (F. King).

Mediterranean Black-headed Gull (*Larus melanocephalus*)

Suffolk: Pakefield, adult, 17th October 1957-16th March 1958 (P. R. Colston, M. J. Carter, B. E. Newport *et al.*).

White's Thrush (*Turdus dauma*)

(Correction): The date of the Fair Isle occurrence (*Brit. Birds*, 53: 168) was 6th November, *not* 18th September.

Melodious Warbler (*Hippolais polyglotta*)

Devon: Lundy, trapped, 10th September (W. B. Workman).

Isles of Scilly: St. Agnes, trapped, 16th September (P. R. Colston, B. E. Newport, E. G. Philp).

Greenish Warbler (*Phylloscopus trochiloides*)

Devon: Lundy, trapped, 2nd-6th November (R. H. Dennis, W. B. Workman).

Arctic Warbler (*Phylloscopus borealis*)

Aberdeenshire: Sands of Forvie, 2nd September (A. J. M. Smith).

This record was listed as rejected in our 1958 report (*Brit. Birds*, 53: 157), but after further consideration is now accepted.

Richard's Pipit (*Anthus novaeseelandiae*)

Devon: Lundy, 4th October (R. H. Dennis, W. B. Workman).

Tawny Pipit (*Anthus campestris*)

Isles of Scilly: St. Agnes, 16th September (P. R. Colston).

Red-throated Pipit (*Anthus cervinus*)

Co. Wexford: Great Saltee, party of three, 1st, 6th and 7th September (J. F. Card, J. J. M. Flegg, D. F. Musson *et al.*).

Woodchat Shrike (*Lanius senator*)

Devon: Lundy, adult, 29th-31st July; immature, 30th August and (believed same bird) 1st-4th September (R. H. Dennis, W. B. Workman *et al.*).

Norfolk: Buxton Heath, ♂, 15th June (E. Daniels).

Isles of Scilly: Gugh, immature, 14th-15th September (P. R. Colston, B. E. Newport, G. L. Scott).

Black-headed Bunting (*Emberiza melanocephala*)

Co. Wexford: Ballymore, 28th November (T. J. Underwood).

While this species is not imported on anything like the same scale as the Red-headed Bunting (*E. bruniceps*) (see *Brit. Birds*, 53: 172, and page 429 below), and though its geographical range is such that it is much more likely to occur here, the fact remains that each year moderate numbers are brought into this country from India and sold reasonably cheaply for about £1 each. Black-headed Buntings are therefore not uncommonly found in aviaries and there must always be the possibility that records of apparently wild birds refer to ones that have escaped. In the present case it should be added that 28th November is a very late date for a wild individual of a species that is only a summer-visitor to SE Europe and has a south-easterly autumn migration to its winter-quarters in India.

Rustic Bunting (*Emberiza rustica*)

Fair Isle: first-winter ♂, trapped, 23rd September-9th October (P. Davis, P. Hope Jones).

SYSTEMATIC LIST OF 1959 RECORDS ACCEPTED

White-billed Diver (*Gavia adamsii*)

Ross-shire: Inverness Firth, two, 4th February (Rev. J. Lees); the same observer saw one of these birds again on the 5th (with J. Macintosh), 6th (with Dr. M. Rusk) and 11th (with A. Anderson), and the other again on the 8th.

Purple Heron (*Ardea purpurea*)

Cambridgeshire: Fulbourn Fen, 4th-5th April (G. M. S. Easy, C. A. E. Kirtland, A. E. Vine *et al.*).

Essex/Suffolk: R. Stour Marshes, Flatford/Cattawade, juvenile, 2nd-3rd October (R. V. A. Marshall *et al.*).

Norfolk: Cley, 9th May (R. A. Richardson).

Little Egret (*Egretta garzetta*)

Cornwall: Godrevy, 18th October (R. Gendall, A. G. Parsons); Hayle Estuary, 9th November to end of year (Dr. G. Allsop, Rev. J. E. Beckerlegge, Rev. B. F. Harvey *et al.*); possibly one individual.

Devon: Puslinch, Yealm Estuary, 24th November-17th December (L. I. Hamilton, O. D. Hunt, F. R. Smith *et al.*).

Hampshire/Sussex: one which first appeared at Langstone Harbour (Hampshire) on 26th July (D. F. Billett, J. Simons, A. Walker) was next seen on Thorney Island (Sussex) on 30th July (H. Lockett) and from 3rd to 23rd August divided its time between Fishbourne and Manhood End (Sussex) (S. J. K. Eames, G. Rouse, Dr. J. Stafford *et al.*).

As previously suggested (*Brit. Birds*, 53: 159), it is conceivable that the Snowy Egret (*E. thula*) of North America might occasionally

cross the Atlantic. It is indistinguishable in the field from the Little Egret and regarded by some authorities as conspecific with it.

Black Stork (*Ciconia nigra*)

Northumberland: Cullernose Point, 10th May (Sir John Craster, W. S. Craster, F. Gregory *et al.*).

Glossy Ibis (*Plegadis falcinellus*)

Devon: Tamar Lake, 25th September (S. T. Matthews, W. J. Moyle *et al.*, per Mrs. F. E. Carter); Braunton Marshes, 27th September (M. Huxtable, I. Taylor, A. J. Vickery); probably one individual.

Flintshire: Dee Estuary, 16th September-4th or 6th October (C. Carter, Miss M. Henderson, P. Summers *et al.*).

Co. Westmeath: Lough Ennel, first-winter ♀, shot, 9th October (Rev. P. G. Kennedy); now preserved in the National Museum, Dublin.

[Flamingo (*Phoenicopterus ruber*)

Cheshire/Lancashire: Merseyside, two, 6th September-18th October (R. H. Allen, D. Arkle, S. G. Hopkins *et al.*).

There can be no reasonable doubt that these were the two birds which had escaped from Belle Vue Zoo, Manchester, on 16th August.]

Teal (*Anas crecca*)

Co. Wexford: Killag, ♂ showing the characters of the Green-winged Teal (*A. c. carolinensis*), 18th April (H. Hvass, P. J. Roche, Baroness Weddell-Weddellsborg *et al.*).

Red-crested Pochard (*Netta rufina*)

Devon: R. Plym Estuary, the ♀ which was stated to have been present from 8th November 1958 to 3rd April 1959 (*Brit. Birds*, 53: 161) actually remained throughout 1959 and was still there at the beginning of 1960 (L. I. Hamilton *et al.*); what was considered to be the same bird was also sometimes seen at Kitley Pond on the R. Yealm from 17th August onwards (R. M. Curber, P. F. Goodfellow *et al.*).

Essex: Abberton Reservoir, ♀, 5th February (R. Harkness); present from 20th September-5th November, three on 30th September, five (one adult ♂) on 25th October, otherwise one to two (R. G. H. Cant, M. S. Freeman, C. F. Mann *et al.*); Nazeing gravel-pit, ♀, 5th September-6th November (T. W. Gladwin, B. S. Meadows, B. S. Nau *et al.*); Hanningfield Reservoir, adult ♂, 11th November (Miss D. R. Crofts, Miss S. R. Crofts).

Glamorgan: Lisvane Reservoir, Cardiff, ♂ and ♀, 14th November (O. Griffith, Mrs. A. Heatheote).

Lincolnshire: Tallington/Deeping, ♂ and ♀ together and two ♂♂ and ♀ together on various pits from mid-November to about mid-December (A. Cook, N. Dudley, R. E. M. Pileher); never all five seen on one day, so there may have been only three altogether, but the birds were always in one of these two combinations.

Norfolk: Bayfield, Brinton and Kelling Hall lakes, ♂, 15th-31st December (R. P. Bagnall-Oakeley, J. Forster, General Sir Gerald Lathbury *et al.*; see also *Brit. Birds*, 53: 271-272).

Northamptonshire: Pitsford Reservoir, ♂, 5th and 10th September (G. E. Dunmore, M. Goodman, G. D. Hamilton-Grey); Ravensthorpe Reservoir, one to two (♂ and ♀), 3rd October-22nd November (M. Goodman, J. L. Moore, L. S. Taylor).

Nottinghamshire: Gunthorpe gravel-pits, immature ♀, 12th-14th August (A. Dobbs, Mrs. H. Dobbs, W. Priestley).

Oxfordshire: Stanton Harcourt, ♂, 19th December 1959-10th April 1960 (Dr. Bruce Campbell, W. D. Campbell, M. H. Rowntree *et al.*).

Surrey: Enton Ponds, near Godalming, ♂, 5th August (G. S. Elliott, R. M. Fry).

Sussex: Chichester gravel-pits, the ♀ which appeared on 6th December 1958 (*Brit. Birds*, 53: 161) was last seen on 26th January (Miss W. P. White *et al.*); Weir Wood Reservoir, ♂ in eclipse, 13th and 24th July (R. L. Rolfe).

Yorkshire: Hornsea Mere, two, 26th September; four, 27th September; four (one ♂), 18th October; two, 13th December (G. R. Bennett).

Once again we would draw attention to G. A. Pyman's paper (*Brit. Birds*, 52: 42-56) on the present status of this species in Great Britain and Ireland. It has previously been mentioned (*Brit. Birds*, 53: 161) in connection with the Devon record that a female escaped from a collection in the same general area three to four years previously. No other escapes which could be said to point to the origin of any of the remaining birds listed above have been notified, although, unquestionably, a few Red-crested Pochards wander away from collections (including such places as St. James's Park, London) every year. On the other hand, the majority of the east coast occurrences fit in well with the pattern of previous years and the autumn records from Abberton Reservoir and Hornsea Mere in particular are likely to refer to wild visitors from Holland or the Baltic.

Ring-necked Duck (*Aythya collaris*)

Berkshire: near Reading, adult ♂, 19th-27th April (*Brit. Birds*, 52: 427-430).

Ferruginous Duck (*Aythya nyroca*)

Devon: Slapton Ley, 14th-15th November (M. J. McVail, A. C. Sawle *et al.*); Creedy Park, near Crediton, two, 29th December (G. H. Gush).

Lincolnshire: Baston pits, near Bourne, ♀, shot, 21st November (N. Dudley *per* L. E. M. Pilcher).

Norfolk: near Norwich, adult ♂, 28th February-31st March (C. A. Wright); considered likely to have been the individual seen in the same locality in 1958 (*Brit. Birds*, 53: 161).

Northamptonshire: Hollowell Reservoir, 18th October (G. D. Hamilton-Grey).

Co. Wexford: North Slob, ♂, shot, 14th November (P. J. Roche); now preserved in the National Museum, Dublin.

We have also received details of a number of occurrences of this species early in 1960 (which will be published in the next report) and it is clear that there was a sizeable influx during the course of the winter of 1959-60.

Surf Scoter (*Melanitta perspicillata*)

Outer Hebrides: South Harris, adult ♂, 4th September (Dr. J. W. Campbell *et al.*).

King Eider (*Somateria spectabilis*)

Shetland: Bigton Wick (between St. Ninian's Isle and Mainland), adult ♂, 24th June (E. A. Grove, T. Henderson, W. Kay *et al.*).

Co. Cork: Baltimore, ♂, 29th January-24th February (T. H. Somerville).

Lesser White-fronted Goose (*Anser erythropus*)

Kirkcudbrightshire: adult, 30th January-4th February (H. G. Alexander, A. D. Watson *et al.*)

Snow Goose (*Anser caerulescens*)

Aberdeenshire: Loch of Strathbeg, 21st December (Dr. A. Lyell, B. A. Lyell).

Inverness-shire: between Pityoulish and Tulloch, immature, 5th April (W. K. Richmond).

Perthshire: Longforgan, 12th-13th January (H. Boase).

Co. Wexford: North Slob, the white phase bird which was present during the winter of 1958-59 (*Brit. Birds*, 53: 162) remained at least until 10th March (T. J. Underwood); blue phase, 14th November 1959 (probably earlier)-19th April 1960 (Miss G. Doran, Major R. F. Rutledge *et al.*).

We mentioned in our first report (*Brit. Birds*, 53: 162) that three birds were known to have escaped from a collection near Dumfries in 1958. We are indebted to Hugh Boyd for the information that four Lesser Snow Geese (*A. c. caerulescens*) wandered from Slimbridge about February 1957 and have not since been traced.

Red-breasted Goose (*Branta ruficollis*)

Gloucestershire: Slimbridge, adult, 24th January-12th March (P. J. Olney *et al.*).

Goshawk (*Accipiter gentilis*)

Inner Hebrides: Loch Ballygrant, Islay, 28th April (B. E. Cooper, S. Greenwood).

Co. Kerry: Blennerville, 7th August (F. King).

Kite (*Milvus milvus*)
(elsewhere than in Wales)

Devon: Dartmoor, two, 13th April (A. J. Ingram); one remained until 12th July (H. G. Hurrell, F. R. Smith *et al.*).

Isle of Man: Ballaugh, 9th January-early February (J. C. Crellin, P. R. Foulkes-Roberts).

Gyr Falcon (*Falco rusticolus*)

Cheshire: Hilbre Point, 31st October (A. Bell, J. Gittings, Dr. R. J. H. Raines).

Red-footed Falcon (*Falco vespertinus*)

Dorset: Burton Bradstock, first-summer ♂, 16th-17th May (R. Gipps, N. Henson, J. R. N. Newsome *et al.*).

Hampshire: New Forest (Bishop's Dyke), five (adult ♂, first-summer ♂ adult ♀ and two immature ♀♀), 16th May; four, 17th May; three, 18th May; four 23rd-24th May; one, 28th-30th May; one (adult ♂), 6th June (H. G. Alexander, M. Goodman, J. H. Taverner *et al.*).

Kent: Lydd-on-Sea, 28th May (C. J. Booth, D. L. Court).

Lancashire: Leigh, ♂, 15th March (F. R. Horrocks); a notably early date.

Norfolk: Cley, ♂, 9th May (A. Jones, R. A. Richardson *et al.*); Blakeney Point, ♂, 15th May (R. Gaze), possibly the Cley bird; near Acle, juvenile, dead, 27th September (H. F. Ashton).

The marked influx in the spring of 1959 (which is known to have extended to southern Sweden) should be noted. The Hampshire occurrences appear to constitute the first record of a party of Red-footed Falcons in Great Britain or Ireland.

Crane (*Megalongis grus*)

Co. Durham: Teesmouth, adult, 29th July-1st November (E. G. Brown, F. G. Grey, W. K. Richmond *et al.*).

Hampshire: Beaulieu River, adult, 5th-29th November when found dead (D. F. Billett, E. J. Wiseman, D. Wooldridge *et al.*).

Norfolk: Cley, 10th May (P. R. Clarke, R. A. Richardson, P. Williams).

We have no recent evidence of any European Cranes having escaped from captivity. The remains of the Hampshire bird were submitted to I. F. Keymer of the Central Veterinary Laboratory of the Ministry of Agriculture and Fisheries, Weybridge. There was a considerable amount of fat in the abdominal cavity and it had apparently died as a result of some injury.

Little Crane (*Porzana parva*)

Hampshire: Farlington Marshes, ♂, 14th-20th September (M. Bryant, J. Simons, E. J. Wiseman *et al.*).

Shetland: Uycasound, Unst, ♂, picked up dead, April (S. T. Saxby); now preserved in the Royal Scottish Museum.

Little Bustard (*Otis tetrax*)

Suffolk: Leiston, ♀ of Eastern form *O. t. orientalis*, shot, 3rd December (H. Drake *per* R. Spencer); now preserved in R. Spencer's possession.

Kentish Plover (*Charadrius alexandrinus*)

elsewhere than on the coast from the Wash to Hampshire and the Isle of Wight)

Dorset: Portland Bill, ♂, 23rd March (F. G. Caldwell, J. Lane, D. C. Mole); Ferrybridge, Portland, ♂, 25th April (Miss M. D. Crosby, E. H. Lousley, R. H. J. Nash).

Essex: Walthamstow Reservoirs, ♀, 19th April (J. Fitzpatrick).

Lincolnshire/Norfolk: Wisbech sewage-farm, ♀, 21st May (J. A. W. Moyes).

Nottinghamshire: Nottingham sewage-farm, ♂, 18th April (H. Barlow).

Co. Antrim: Lough Neagh, 18th October (W. Finlay, S. Penney).

Killdeer (*Charadrius vociferus*)

Huntingdonshire: Little Paxton gravel-pit, 7th-9th March (I. J. Ferguson-Lees, C. W. G. Paulson-Ellis, C. F. Tebbutt).

Short-billed or Long-billed Dowitcher (*Limnodromus griseus* or *scolopaceus*)

Cheshire: Frodsham, 18th October (R. H. Allen, D. Arkle, S. G. Hopkins *et al.*).

Northumberland: Killingworth, 28th September-1st November (V. F. Brown, F. G. Grey, B. Galloway *et al.*).

Sussex: Thorney Island, 2nd-11th November (G. des Forges, D. D. Harber, Dr. C. Suffern *et al.*).

A brief statement regarding the two species of dowitcher will be found in our first report (*Brit. Birds*, 53: 164-165), but it is hoped to set out the position more fully in a forthcoming issue of this journal. While in the cases of the Cheshire and Northumberland birds the actual species must remain in doubt, it is expected that the Sussex one will be confirmed as a Long-billed Dowitcher (*L. scolopaceus*).

Great Snipe (*Capella media*)

Essex/Middlesex: Girling Reservoir (Essex) and Ponders End sewage-farm (Middlesex), 12th-17th September (D. King, B. S. Meadows, F. Riley).

Hertfordshire: Rye Meads sewage-farm, 26th December (B. S. Meadows, F. Riley).

Lesser Yellowlegs (*Tringa flavipes*)

Devon: Torridge Estuary, near Instow, 30th August (R. L. Smallwood).

White-rumped Sandpiper (*Calidris fuscicollis*)

Sussex: Thorney Island, 9th-28th November (R. J. Johns, Dr. C. Suffern, R. J. Wilmshurst *et al.*).

Co. Dublin: Dun Laoghaire, two, 26th August (O. J. Merne).

Co. Kerry: Ballyheigue Strand, 28th January (F. King).

The January bird was the first one ever recorded in Great Britain or Ireland in winter.

Pectoral Sandpiper (*Calidris melanotos*)

Breconshire: Talybont Reservoir, near Brecon, 13th-26th September (D. Griffin, J. Griffiths).

Essex: Hanningfield Reservoir, 29th August-6th September (J. A. Baker, S. Hudgell, G. A. Pyman *et al.*).

Hampshire: Farlington Marshes, 26th-27th July (M. Bryant, C. R. Tubbs *et al.*).

Kent: Murston clay-pits, 24th-25th October (L. J. Davenport, R. P. Tipper).

Yorkshire: Newton Ings, Fairburn, 17th September-12th October (M. Densley, G. R. Naylor, C. Winn *et al.*).

Dunbarton: R. Endrick, 18th October (M. Forrester).

Co. Antrim: Duncrue Street Marsh, Belfast, 30th October (H. Dick).

Co. Dublin: North Bull, 9th-10th September (J. O'Mahony).

Co. Kerry: Blennerville, 12th August (F. King).

Co. Wexford: Great Saltee, trapped, 24th-26th September (F. King, N. Picozzi, P. Rudge *et al.*).

Broad-billed Sandpiper (*Limicola falcinellus*)

Lincolnshire/Norfolk: Wisbech sewage-farm, 18th May (J. M. S. Arnott).

Black-winged Stilt (*Himantopus himantopus*)

Dorset: Lodmoor, Weymouth, adult ♀, 14th-15th May (H. G. Alexander, Miss M. D. Crosby, B. King *et al.*).

Wilson's Phalarope (*Phalaropus tricolor*)

Flintshire: Dee Estuary, 30th August-4th September (*Brit. Birds*, 53: 29-30).

Northamptonshire: Pitsford Reservoir, 8th-12th September (*Brit. Birds*, 53: 30-32).

Pratincole (*Glareola pratincola*)

Northamptonshire: Ecton sewage-farm, with dark underwing, 23rd August (G. E. Dunmore, M. Goodman, L. S. Taylor *et al.*).

This bird possessed the characters of the Black-winged Pratincole (*G. nordmanni*), but only one European species of pratincole is now recognised in this country, *nordmanni* being regarded as a colour phase of *pratincola* (*Ibis*, 98: 161).

Cream-coloured Courser (*Cursorius cursor*)

Devon: Dawlish Warren, 11th-14th October (Miss G. Hughes, Miss M. Robinson, P. A. Tyler *et al.*).

Mediterranean Black-headed Gull (*Larus melanocephalus*)

Dorset: Portland Bill, immature, 12th September (Dr. J. S. Ash, A. J. Horner, E. J. Pilcher *et al.*).

Co. Durham: Hartlepool, as previously reported (*Brit. Birds*, 53: 166), adult, 17th August 1958-8th March 1959; also adult, 9th August 1959-20th March 1960 (D. G. Bell, P. J. Stead *et al.*).

Essex: The Naze, adult, 28th July-27th September (G. A. Pyman, M. S. J. Snoxell, J. H. Sparks *et al.*).

Hampshire: Langstone Harbour, adult, 4th January (D. F. Billett, M. Bryant, E. J. Wiseman) and 24th January (E. J. Wiseman); immature, 1st November (D. F. Billett, G. H. Rees).

Sussex: The Wicks, adult, 22nd April (R. H. Charlwood); Hove, adult(s), 30th June, 3rd and 24th September and 4th October (G. A. Sutton); Portobello, Brighton,

adult(s), 12th July (G. A. Sutton), 5th-6th September (M. H. Port, G. A. Sutton) and 4th October (D. D. Harber); Langney Point, adult, 19th July (R. H. Charlwood); Selsey Bill, adult, 18th July (A. B. Sheldon); immature, 9th August (M. A. Jennings, B. A. E. Marr *et al.*); adult, 29th August (A. B. Sheldon); and adult, 12th September (J. Reynolds); Manhood End, adult, 27th September (M. H. Port, G. A. Sutton); Palace Pier, Brighton, adult, 24th December (L. P. Alder).

Yorkshire: Spurn Head, adult, 2nd May (K. Hardcastle, C. Winn).

It is probable that a substantial proportion of the Sussex records of adults relate to one individual. In Co. Durham and Essex what were presumably the same individuals were appearing for the fourth consecutive year in the same localities.

Sabine's Gull (*Xema sabini*)

Anglesey: Llanddwyn Island, two immatures, 26th December, one remaining until 4th January 1960 (L. S. V. Venables, Miss F. Walton, P. D. Walton *et al.*).

Cornwall: The Island, St. Ives, immature, 22nd September; and immature, 28th October (N. R. Phillips); Harlyn Bay, near Padstow, immature, 10th October (H. Mayer-Gross).

Dorset: Portland Bill, adult, 12th September (B. A. E. Marr, E. J. Wiseman, D. Wooldridge *et al.*).

Kent: Cliffe, immature, 29th March (P. Bance, W. E. Barratt, B. E. Madagan); Elmley Ferry, adult, 12th September (L. J. Davenport, M. J. Lane, D. K. Marden).

Northumberland: Seaton Sluice, immature, 14th November (G. Bruce, B. Galloway, C. Watson).

Sussex: Langney Point, immature, 10th October (D. D. Harber).

Isle of Wight: off St. Catherine's Point, immature, 16th October (A. Y. Norris).

Co. Down: Kinnegar, immature, 19th August (M. C. Gray).

White-winged Black Tern (*Chlidonias leucopterus*)

Dorset: Ferrybridge, Portland, adult, 7th-8th June (R. Chainey); Radipole Lake, Weymouth, immature, 19th-21st August (Miss M. D. Crosby, R. F. Moore, K. Williamson *et al.*).

Essex: Hanningfield Reservoir, immature, 5th-20th September (S. Hudgell, N. H. Pratt, G. A. Pyman *et al.*).

Hampshire: Langstone Harbour, immature, 14th September (N. Money, E. J. Wiseman).

Kent: Murston clay-pits, immature(s), 28th August (J. J. M. Flegg) and 29th August (J. J. M. Flegg, D. F. Musson); the first-named observer considered that two different birds were involved, but in our view this cannot be substantiated.

Lincolnshire: Grantham sewage-farm, Marston, adult, 3rd June (Mrs. L. Cave).

Sussex: Selsey Bill, 18th April (M. A. Jennings, A. B. Sheldon); Sidlesham Ferry, 13th-16th May (Mrs. N. Petrie-Hay, A. B. Sheldon, M. Shrubbs *et al.*) and 30th May (D. Langford, A. B. Sheldon), apparently two separate individuals.

Whiskered Tern (*Chlidonias hybrida*)

Somerset: Chew Valley Reservoir, 23rd-25th June (H. H. Davis, B. King, M. A. Wright *et al.*).

A paper by K. Williamson on the juvenile and winter plumages of the marsh terns, with sketches by D. I. M. Wallace, was specially prepared at the Committee's request and published recently in this journal (*Brit. Birds*, 53: 245-252, plate 36).

Gull-billed Tern (*Gelochelidon nilotica*)

- Hampshire: Christchurch Harbour, 2nd September (H. J. Clase).
- Norfolk: Weybourne, two, 12th May (P. R. Clarke).
- Suffolk: Covehithe Broad, 19th June (C. M. Veysey).
- Sussex: Langney Point, 15th June (L. P. Alder).

Caspian Tern (*Hydroprogne caspia*)

- Essex: Abberton Reservoir, 2nd August (D. G. Gordon-Smith).
- Norfolk: Hickling Broad, several dates between 10th September and 2nd October (P. D. Kirby, D. R. Rye, J. D. Wood *et al.*).
- Co. Donegal: Tory Island, 30th September (R. G. Pettitt).

Great Spotted Cuckoo (*Clamator glandarius*)

- Orkney: Rendall, immature, 14th-30th August (E. Balfour).

Snowy Owl (*Nyctea scandiaca*)

- Anglesey: Valley, 27th March (A. J. Mercer *et al.*).

Hawk Owl (*Surnia ulula*)

- Lancashire: Bleasdale Fells above Chipping, 13th September (*Brit. Birds*, 53: 446).

Alpine Swift (*Apus melba*)

- Devon: Taw Estuary, 15th August (B. S. Meadows).
- Northumberland: Holywell Ponds, 31st May (Dr. J. D. Parraek).

Bee-eater (*Merops apiaster*)

- Dorset: near Hampreston, 11th May (G. Brasnett).
- Herefordshire: near Aymestrey Quarry, 4th June (F. W. Marston).
- Suffolk: Havergate Island, 3rd July (R. J. Partridge).
- Sutherland: Halladale River, 14th August (Miss M. Henderson).
- Co. Cork: Cape Clear Island, immature, 17th-18th October (P. Burke, J. T. R. Sharrock, Rev. J. Walsh).

Roller (*Coracias garrulus*)

- Middlesex: Staines Reservoir, 26th September (E. E. Green).
- Surrey: Oxshott, 23rd-29th May (D. Parr).
- Shetland: Northmavine, 20th July for three or four days (J. Peterson).

Short-toed Lark (*Calandrella cinerea*)

Cornwall: Tintagel, 10th August (B. W. Edwards).

Norfolk: Cley, 14th October (M. J. Carter, E. J. L. Welham).

Fair Isle: ♀ showing the characters of the Eastern race *C. c. longipennis*, trapped, 21st November; another of exactly similar appearance but unringed, 23rd November (P. Davis, R. H. Dennis).

Co. Wexford: Great Saltee, 22nd May (G. van Gelderen).

Crested Lark (*Galerida cristata*)

Devon: Exmouth, the bird which was stated to have stayed from 29th December 1958 to 3rd January 1959 (*Brit. Birds*, 53: 167) was actually seen again on 10th January (S. D. Gibbard).

Red-rumped Swallow (*Hirundo daurica*)

Kent: Murston clay-pits, 28th August (*Brit. Birds*, 53: 222-223).

Bearded Tit (*Panurus biarmicus*)
(elsewhere than in East Anglia)

Buckinghamshire: near Winslow, 15th September (I. M. Walker); Marsworth Reservoir, four (two adult ♂♂), 22nd-29th November, then at least two (three on 13th December) until 13th March 1960 (H. Cole, F. Knight, K. A. Landon *et al.*).

Gloucestershire: Frampton-on-Severn, 1st November (T. Evans); another bird, 13th December (W. Dunkin, D. Harding, R. D. Harding).

Lincolnshire: near Anderby, two (one adult ♂), 6th December (L. G. Taylor).

Oxfordshire: Cassington gravel-pits, three (one adult ♂), 28th November, two remaining until the end of the year and a ♀ until March 1960 (Dr. Bruce Campbell, W. D. Campbell, Miss H. Cooke *et al.*).

Sussex: Pett Level, up to six or more (two adult ♂♂), three trapped, 26th October-21st November (H. A. R. Cawkell, R. E. Scott, W. J. Vinall *et al.*); The Crumbles, two (one adult ♂), 4th November (R. H. Charlwood).

Warwickshire: Baginton Marsh, near Coventry, three (at least one ♂), 2nd November (J. Cresswell, P. F. Crook).

Yorkshire: Spurn Head, eleven (at least three ♂♂), six trapped, 17th October; seven, 18th-19th October; three flying south, 20th October (R. Chislett, R. F. Dickens, D. A. Rushforth *et al.*); Hornsea Mere, three (one adult ♂), 18th October (G. R. Bennett, M. K. Martin), possibly the birds seen at Spurn on the 20th.

Though resident in Norfolk and Suffolk, this species is very seldom recorded outside these counties and so the list of observations given above is quite remarkable. Following a steady build-up in recent years and an exceptionally good breeding season, it is clear that there was something of an eruption of the East Anglian population in the autumn of 1959 (it has been suggested that some of the birds might have come from Holland, but we understand the numbers there are so small that this is unlikely). In fact, there were several reports from East Anglia of Bearded Tits making "restless flights" away from the reed-beds and at Minsmere, Suffolk, one party was actually seen by

H. E. Axell to go right off out of sight. Besides the records given above, the species was also reported in Essex during the last months of 1959 and one was seen in Cambridgeshire. In addition, early in 1960 several birds reached Hampshire and Shropshire, the latter being the most westerly county concerned in the irruption: the details of these 1960 records will appear in our next report.

Dusky Thrush (*Turdus eunomus*)

(Co. Durham: Hartlepool, first-winter ♂, from 12th December 1959 (*Brit. Birds*, 53: 275-276, plate 35); it is now known that this bird was last seen on 24th February 1960, *not* 20th February as previously published.

White's Thrush (*Turdus dauma*)

(Co. Durham: South Shields, 7th November (S. Hayes).

Great Reed Warbler (*Acrocephalus arundinaceus*)

(Dorset: Portland Bill, 15th May (R. Chainey, B. King).

(Essex: North Fambridge, two, 28th-29th August (J. T. Friedlein).

(Kent: Dungeness, trapped, 3rd August (B. P. Austin, J. F. Harper, W. D. Park *et al.*).

Except in the case of the bird trapped at Dungeness, the descriptions do not rule out the Clamorous Great Reed Warbler (*A. stentoreus*) of southern Asia and Egypt, especially the less rufous race *brunnescens*. The existence of other brown and buff warblers of comparable size—notably the Thick-billed Warbler (*Phragmaticola aëdon*) and Gray's Grasshopper Warbler (*Locustella fasciolata*)—must also be borne in mind in identification of this species (see *Brit. Birds*, 53: 168).

Marsh Warbler (*Acrocephalus palustris*)

(elsewhere than in England)

(Caernarvonshire: Bardsey Island, trapped, 30th June (R. W. Arthur *et al.*).

(Fair Isle: two trapped, 12th and 13th June (P. Davis, R. H. Dennis).

Aquatic Warbler (*Acrocephalus paludicola*)

(Berkshire: Ham sewage-farm, 13th September (E. E. Green).

(Cornwall: Marazion Marshes, 2nd September (B. King).

(Dorset: Portland Bill, trapped, 9th August (F. R. Clifton, K. Williamson *et al.*); at least one, probably two, 23rd August (Dr. J. S. Ash, R. F. Hemsley, R. J. Jackson *et al.*); 24th August (R. F. Hemsley), possibly a different bird.

(Hampshire: Stanpit Marshes, Christchurch, 9th-12th August (R. Burt, J. H. Morgan); three trapped, 6th September (F. R. Clifton, D. J. Godfrey *et al.*), 8th September (F. R. Clifton, Mrs. Clifton, R. J. Jackson) and 19th September (F. R. Clifton, A. J. Wise *et al.*).

(Kent: Dungeness, trapped, 2nd August (B. P. Austin, J. F. Harper *et al.*).

(Isles of Scilly: St. Agnes, 27th August (B. P. Pickess, D. I. M. Wallace *et al.*); 30th August (P. J. Morgan, R. C. Righelato, D. I. M. Wallace *et al.*); trapped, 6th

September (B. King, Prof. M. F. M. Meiklejohn *et al.*); trapped, 8th September (Prof. M. F. M. Meiklejohn *et al.*).

Surrey: Beddington sewage-farm, trapped, 20th September (J. Cooke, P. J. Morgan, R. C. Righelato).

Sussex: north of Pagham Harbour, 29th August (M. Kendall); The Crumbles, 9th September (D. D. Harber).

Isle of Wight: St. Catherine's Point, 31st August (A. Searle, E. J. Wiseman *et al.*).

It is obvious that this species, which is now known to occur annually in these islands, was particularly well represented during August and September 1959, when the number recorded was not far short of half the British and Irish total up to 1939.

Melodious Warbler (*Hippolais polyglotta*)

Caernarvonshire: Bardsey Island, trapped, 1st September (R. W. Arthur).

Dorset: Portland Bill, 27th-29th August (Miss T. F. Almack, A. Searle, K. D. Smith *et al.*).

Kent: Dungeness, trapped, 2nd August (C. J. Booth, W. D. Park, G. R. Shannon *et al.*).

Pembrokeshire: Skokholm, trapped, 18th August (Mrs. K. E. I. Barham, R. D. Wilson).

Isles of Scilly: St. Agnes, 7th September (Prof. M. F. M. Meiklejohn, Miss H. M. Quick, L. J. Reed).

Co. Cork: Cape Clear Island, 3rd September (L. Cornwallis, B. H. B. Dickinson, J. T. R. Sharrock).

Although there are only half as many records of this species for 1959 as for 1958 (*cf. Brit. Birds*, 53: 169, and page 412 above), they follow the same pattern, showing that what was formerly regarded as a very rare vagrant is an annual wanderer in autumn to the Irish Sea area and the south coast of England.

Icterine Warbler (*Hippolais icterina*)

Dorset: Portland Bill, first-winter, trapped, 21st August (P. R. Angell, J. Brock, K. Williamson *et al.*); another, 23rd August (Dr. J. S. Ash, R. J. Jackson, D. C. Mole *et al.*).

Kent: Dungeness, trapped, 25th September (B. P. Austin, S. Bouldy, M. A. Webster *et al.*).

Pembrokeshire: Skomer, 30th May (J. W. Donovan, N. H. Pratt, R. H. M. Ryall *et al.*).

Yorkshire: Beacon Lane, Kilnsea, 31st August (D. J. Standring); Spurn Head, three (two trapped), 2nd September (Lt.-Col. H. G. Brownlow, D. D. Harber *et al.*), and single birds seen on 3rd and 4th September (G. R. Edwards).

Fair Isle: one, 24th-26th May; at least five different birds in August—one 12th; two (one trapped) 13th; one trapped 14th; one 20th; two (one trapped and bird of 13th retrapped) 21st; two (one trapped and a ringed bird seen) 23rd; ringed bird seen 27th; bird trapped on 21st retrapped 29th (P. Davis, R. H. Dennis).

Co. Cork: Cape Clear Island, trapped, 26th August (L. Cornwallis, B. H. B. Dickinson *et al.*); 2nd September (L. Cornwallis, M. F. Seddon *et al.*); two, 21st September (J. T. R. Sharrock).

Co. Wexford: Great Saltee, two first-winter, both trapped, 4th September (T. Ennis, J. T. Lang, R. G. Wheeler *et al.*) and 7th September (T. Ennis, R. Moss, M. A. Ogilvie).

Melodious or Icterine Warbler (*Hippolais polyglotta* or *icterina*)

Birds which were of one or other of these two species were reported from Portland Bill (Dorset) on 25th and (probably the same individual) 28th August (R. F. Hemsley, P. N. M. Partington, D. Wooldridge *et al.*); Holme-next-the-Sea (Norfolk) on 21st August (C. D. T. Minton); Gugh (Isles of Scilly) (two) on 27th August (D. I. M. Wallace); St. Catherine's Point (Isle of Wight) on 22nd August (M. Burnop, E. J. Wiseman *et al.*); Helmsdale (Sutherland) on 3rd September (H. A. Course); Cape Clear Island (Co. Cork) on 31st August (L. Cornwallis); and Great Saltee (Co. Wexford) on 21st September (M. C. Gray). The reasons for the publication of these indeterminate records of Melodious/Icterine Warblers were discussed in our 1958 report (*Brit. Birds*, 53: 153 and 169).

Olivaceous Warbler (*Hippolais pallida*)

Co. Donegal: Tory Island, trapped, 29th September (*Brit. Birds*, 53: 311-312).

Booted Warbler (*Hippolais caligata*)

Fair Isle: trapped, 29th-31st August (*Brit. Birds*, 53: 123-125).

Rufous Warbler (*Agrobates galactotes*)

Devon: near Prawle Point, 20th October (*Brit. Birds*, 53: 225-226).

Greenish Warbler (*Phylloscopus trochiloides*)

Sussex: The Crumbles, 10th September (D. D. Harber).

Co. Cork: Cape Clear Island, 17th-24th October and 30th October-1st November (J. T. R. Sharrock); although the two series of observations were made in different parts of the island and the descriptions taken were not identical, we do not regard it as established that two birds were involved.

Bonelli's Warbler (*Phylloscopus bonelli*)

Caernarvonshire: Bardsey Island, two trapped, 18th August-5th September and 10th September (*Brit. Birds* 53: 276-278).

Arctic Warbler (*Phylloscopus borealis*)

Devon: Lundy, trapped, 6th September (W. B. Workman *et al.*).

Fair Isle: three trapped, 1st, 8th and 17th September (P. Davis, R. H. Dennis).

Yellow-browed Warbler (*Phylloscopus inornatus*)

Kent: Folkestone, 22nd September (D. F. Musson); Sandwich Bay, trapped, 27th September; another, 30th September; another trapped, 3rd October (D. F. Harle).

Pembrokeshire: Skokholm, trapped, 2nd October (Mrs. K. E. I. Barham, K. D. Smith).

Fair Isle: 26th September; trapped, 2nd-5th October; trapped, 12th October; 14th October (P. Davis, R. H. Dennis).

Outer Hebrides: Butt of Lewis, 9th-12th November (A. MacEachern).

Fife: Isle of May, trapped, 2nd October (Prof. M. F. M. Meiklejohn *et al.*).

Co. Cork: Cape Clear Island, 19th September (J. T. R. Sharrock).

English Channel: on board R.M.S. *Queen Elizabeth* between Cherbourg and Southampton, last seen 10-15 miles from St. Catherine's Point (Isle of Wight), 12th October (Dr. I. C. T. Nisbet).

Firecrest (*Regulus ignicapillus*)

(elsewhere than in England and Wales)

Fife: Isle of May, ♂, trapped, 30th September-3rd October (D. R. Grant, Prof. M. F. M. Meiklejohn, R. W. J. Smith *et al.*).

Co. Cork: Cape Clear Island, seven, 10th October, one ♂ remaining until 12th (J. T. R. Sharrock).

These are the first and third fully authenticated records of this species in Scotland and Ireland respectively.

Alpine Accentor (*Prunella collaris*)

Fair Isle: 27th-28th June (P. Davis, R. H. Dennis, C. J. Pennycuik *et al.*).

Richard's Pipit (*Anthus novaeseelandiae*)

Somerset: near West Huntspill, as previously stated (*Brit. Birds*, 53: 171), one was present from 21st December 1958 to mid-February 1959.

Fair Isle: three, 8th October (P. Davis).

Tawny Pipit (*Anthus campestris*)

Dorset: Portland Bill, 5th September (K. V. Edwards, L. A. Mummery, D. Wooldridge); 6th September (Dr. J. S. Ash, A. J. Hold, K. D. Smith *et al.*); 11th September (D. E. Fry); two, 28th September (P. H. Dymott, T. O. James, Dr. A. B. Watson *et al.*).

Sussex: The Crumbles, 9th September (D. D. Harber).

Co. Cork: Cape Clear Island, adult, 9th October (J. T. R. Sharrock).

Red-throated Pipit (*Anthus cervinus*)

Norfolk: Scolt Head, adult ♂, 15th-18th May, joined by a ♀ or immature on 16th only (R. Chestney, P. J. Mountford, J. F. Peake).

Fair Isle: one on 18th May (P. Davis, J. Stout *et al.*) had probably been present since 16th.

Yellow Wagtail (*Motacilla flava*)

Essex: The Hythe, Colchester, ♂ showing the characters of the southern European Ashy-headed race *M. f. cinereocapilla*, 7th-8th April (C. F. Mann, J. H. Sparks *et al.*).

Middlesex: Perry Oaks sewage-farm, ♂ as above, 10th-11th May (J. Shepperd) and 31st May-12th June (B. A. Marsh, A. Quinn, J. Shepperd *et al.*).

Woodchat Shrike (*Lanius senator*)

Dorset: Chideok, near East Chaldon, 2nd May (Mrs. G. E. Evans, W. J. Evans); Portland Bill, immature, 9th September (P. J. Fullagar, D. C. Mole, J. H. Morgan *et al.*).

Essex: Foulness Island, ♂, 6th-7th June (G. Downcy).

Kent: Dungeness, immature, trapped, 13th August (B. P. Austin *et al.*).

Northumberland: Craster, adult, 25th May (W. S. Craster, Dr. E. A. R. Ennion).

Isles of Scilly: St. Agnes, immature, 26th August (B. P. Pickess, D. I. M. Wallace, Mrs. K. Wallace); immature, 27th August (D. I. M. Wallace *et al.*); considered to have been two separate individuals.

Co. Wexford: Great Saltee, immature, trapped, 30th August-9th September (T. Ennis, R. Moss, M. A. Ogilvie *et al.*).

Red-backed Shrike (*Lanius cristatus*)

Dorset: Portland Bill, juvenile showing the characters of one of the *isabellinus* group of central Asia, known as the Red-tailed or Isabelline Shrikes, 10th September (P. J. Fullagar, J. H. Morgan, K. D. Smith *et al.*). It was described as a generally pale shrike; head greyish-brown, conspicuous black bar behind eye; upper-parts pale greyish-brown; wings darker with a large pale greyish area at base of primaries; under-parts off-white, closely barred buff; tail rich rufous red, appearing darker towards tip, quite noticeable at considerable range; rump apparently also rufous; bill pale.

The *isabellinus* group is now generally regarded as conspecific with the Red-backed Shrikes (*collurio*), and by some authorities both are united with the Brown Shrikes under *Lanius cristatus*. There are four races in the Red-tailed group—*isabellinus* itself, *phoenicuroides*, *speculigerus* and *tsaimadensis*—but we do not consider that it is possible to relate the Portland bird to any particular one of them. It will be remembered that an adult male Isabelline Shrike was identified on the Isle of May in 1950 (*Brit. Birds*, 44: 217-219 and frontispiece): this was referred to as *Lanius isabellinus* in accordance with the treatment in what was then the latest work on the taxonomy of shrikes, G. Olivier's *Monographie des Pies-Grièches du Genre Lanius* (1944). Subsequently, however, various authors such as H. Johansen (1952, *J. Orn.*, 92: 198-202) have supported the earlier findings of B. K. Stegmann (1930, *Orn. Monatsb.*, 38: 106-118) and several others that the Red-backed (*collurio*) and Red-tailed (*isabellinus*) Shrikes interbreed freely where their ranges meet and produce a variety of intermediates. As a result C. Vaurie (1955, *Amer. Mus. Nov.*, no. 1752, pp. 2-7) treated them as conspecific and this is how they appear in his *The Birds of the Palearctic Fauna* (1959, see

esp. p. 96). Other authorities—Col. R. Meinertzhagen and G. P. Dementiev, for example—go further and unite both with the Brown Shrikes (*cristatus*) since interbreeding with them also takes place (see references listed by Annie P. Grey, 1958, in *Bird Hybrids*, p. 202) and the three groups replace each other geographically in a range which, united, extends from western Europe to eastern Asia. It is thus that they are treated by Dementiev in *The Birds of the Soviet Union* (vol. 6, pp. 11-28) and by the B.O.U. Taxonomic Committee in its recommendations in 1956 (*Ibis*, 98: 167). As stated in the introduction to this report, it is our policy to follow the decisions of the latter Committee, and we therefore refer both the Portland and the Isle of May birds to *Lanius cristatus*. The Isabelline Shrike can no longer stand on the British list as a distinct species.

Rose-coloured Starling (*Sturnus roseus*)

Dorset: Portland Bill, immature, 6th September (Dr. J. S. Ash, D. E. Fry, H. Nash *et al.*).

Nottinghamshire: Woodthorpe, Nottingham, adult, second and third weeks October (Mr. Archer, Mrs. J. Marland *et al.*, per A. Dobbs).

Somerset: Street, adult, 26th July (J. B. Gillett *et al.*).

Rose-coloured Starlings are regularly imported in captivity, but this is chiefly in winter and they seldom regain the full pink plumage.

Serin (*Serinus canarius*)

Co. Cork: Cape Clear Island, 4th October (J. T. R. Sharrock).

Scarlet Grosbeak (*Carpodacus erythrinus*)

Suffolk: Benacre, trapped, 2nd-4th September (R. Hepher, A. G. Hurrell, M. J. Scago).

Fair Isle: two (one trapped), 29th-30th August; four (one trapped), 31st August, two remaining until 2nd September; one trapped, 7th-10th September; one trapped, 15th-25th September (P. Davis, R. H. Dennis).

Fife: Isle of May, trapped, 28th August (W. E. Curtis, D. Hope, A. Macdonald *et al.*).

Shetland: Foula, one 2nd-5th September and another 5th-6th (J. V. Boys).

Scarlet Grosbeaks are imported from India every year and sold in this country as Rose Finches, the name by which they are known in other parts of the English-speaking world. There is virtually no doubt that all the above records refer to genuinely wild birds, since the species is a regular autumn wanderer to Fair Isle and the other dates agree well, but out-of-season occurrences or ones away from the east coast must be open to some suspicion. All the above were females or immatures, as is usually the case with the individuals that reach these islands.

Two-barred Crossbill (*Loxia leucoptera*)

Inverness-shire: Newtonmore, adult ♂, dead, 21st August (R. Perry); now preserved at Aberdeen University.

Shetland: Foula, immature, 21st August (J. V. Boys, R. I. Duncan, H. G. Rees).

Unusual numbers of Two-barred Crossbills were seen in Denmark, Norway and Sweden in August and September 1959.

Song Sparrow (*Melospiza melodia*)

Fair Isle: ♂, 27th April-10th May (*Brit. Birds*, 52: 419-421, plate 70).

Red-headed Bunting (*Emberiza bruniceps*)

Caernarvonshire: Bardsey Island, ♂, 22nd July (R. W. Arthur *et al.*); ♂, 29th-31st August (Mrs. S. Cowdy, Miss F. Walton *et al.*).

Kent: Dungeness, ♂, trapped, 18th May (G. J. Harris, R. E. Scott *et al.*).

Pembrokeshire: Skokholm, ♂, 16th-24th May (Mrs. K. E. I. Barham, R. D. Wilson).

Outer Hebrides: Roarim, Flannan Islands, ♂, 24th June (T. B. Bagenal, D. Baird, Dr. W. J. Eggeling).

Co. Wexford: Great Saltee, adult ♂, trapped, 2nd September (P. P. Creed, F. King, A. Rogers *et al.*).

We have previously pointed out (*Brit. Birds*, 53: 172) that Red-headed Buntings, most of them males, are now imported into Great Britain and other western European countries in enormous numbers each year as cage-birds. In view of this and having regard also to the species' range, there can be little room for doubt that the vast majority, if not all, of the increasing number of records of *bruniceps* at large refer to ones that have escaped. It is relevant to add that R. A. Richardson, who examined the feathers shed by the Great Saltee individual when it was trapped, found that their condition was consistent with those of an escaped cage-bird.

Yellow-breasted Bunting (*Emberiza aureola*)

Co. Donegal: Tory Island, ♀, 18th September (*Brit. Birds*, 53: 229).

Rustic Bunting (*Emberiza rustica*)

Fair Isle: 15th October (J. Stout).

Fife: Isle of May, immature, trapped, 6th May (J. Hoy, D. B. D. Jones, Mrs. G. Waterston *et al.*).

Co. Cork: Cape Clear Island, ♂, 9th October (J. T. R. Sharrock).

Little Bunting (*Emberiza pusilla*)

Caernarvonshire: Bardsey Island, trapped, 11th and 16th October (R. W. Arthur).

Fair Isle: adult, trapped, 17th October (P. Davis, R. H. Dennis); first-winter, 19th-27th October (P. Davis).

Fife: Isle of May, 17th-18th September (M. E. French, N. G. C. Campbell, J. E. King *et al.*).

APPENDIX—OBSERVATIONS IN “RECENT REPORTS AND NEWS” NOW REJECTED

For the sake of the completeness of this journal, we are continuing our practice of listing claimed occurrences which have appeared in the “Recent reports and news” feature but which we are now unable to accept after full consideration of the available details. Records of this kind rejected since the publication of our first report are set out below under the years to which they relate:

1958

Surf Scoter	North Bull, Dublin, 9th November (<i>Brit. Birds</i> , 51: 528 and 52: 72)
Solitary Sandpiper	Castlerock, Co. Derry, 25th May (51: 280)
Mediterranean Black-headed Gull	Kinnegar, Co. Down, 6th September (51: 363) Off Scarborough, Yorkshire, 12th October (51: 530)
Short-toed Lark	Hilbre Island, Cheshire, 4th April (51: 205)
Richard's Pipit	Staines Reservoir, Middlesex, 12th April (51: 207) Lundy, Devon, 17th-21st September (51: 434)

1959

Crane	Slimbridge, Gloucestershire, 4th April (52: 140)
Little Bustard	Near Eversleigh, Wiltshire, 5th May (52: 272)
Dowitcher	Aberlady Bay, East Lothian, 1st November (52: 439)
Great Snipe	Farlington Marshes, Hampshire, 4th April (52: 204) Leighton Moss, Lancashire, 20th September (52: 439) Rye Harbour, Sussex, 26th September (52: 439) Cambridge sewage-farm, Cambridgeshire, 12th-22nd (actually 12th and 19th) October (52: 439)
Lesser Yellowlegs	Seahouses, Northumberland, 30th September (52: 439)
White-rumped Sandpiper	Near Seascale, Cumberland, 3rd October (52: 439)
Black-winged Stilt	Holy Island, Northumberland (two), 13th April (52: 204)
Mediterranean Black-headed Gull	Langstone Harbour, Hampshire, 20th September (52: 440)
Sabine's Gull	Gibraltar Point, Lincolnshire, 6th September (52: 440) Tring Reservoirs, Hertfordshire, 26th September (52: 440) Selsey Bill, Sussex, 2nd November (52: 440)
White-winged Black Tern	Farlington Marshes, Hampshire, 20th August (52: 320)
Gull-billed Tern	Poole Harbour, Dorset (seven), 3rd May (52: 272)
Caspian Tern	Windermere, Lancashire/Westmorland, 15th August (52: 320)
Alpine Swift	Clyro, Radnorshire, 14th August (52: 320)
Roller	Tory Island, Co. Donegal, 30th September (53: 42)
Scops Owl	Bardsey Island, Caernarvonshire, 25th May (52: 279)
Short-toed Lark	Southwold, Suffolk, 3rd June (52: 279)
Crested Lark	Bodmin Moor, Cornwall, 14th June (52: 280)
Nutcracker	Keresley, Warwickshire, 4th January (52: 32)

Marsh Warbler	Fair Isle, 30th June (52: 280)
Aquatic Warbler	Between Brasted and Westerham, Kent, 23rd-24th August (52: 319)
	Ham Island, Old Windsor, Berkshire, 29th August (52: 319)
Greenish Warbler	Holkham, Norfolk, 12th October (53: 45)
Yellow-browed Warbler	Sandwich, Kent, 4th (actually 9th) October (53: 45)
Richard's Pipit	Sandwich Bay, Kent, 1st October (53: 47)
	West Huntspill, Somerset, 4th-18th October (53: 47)
	Cape Clear Island, Co. Cork, 14th October (53: 47)
Tawny Pipit	Whitstable, Kent, 4th (actually 1st) September (53: 47)
Ashy-headed Wagtail	Off Cross Sands Light-vessel, Norfolk coast, 10th May (52: 274)
Rose-coloured Starling	Near Eridge (Kent), Sussex, 19th-20th December (53: 96)
Arctic Redpoll	Hilbre Island, Cheshire (three), 16th (actually 17th) October (53: 47)
Little Bunting	Cape Clear Island, Co. Cork (from one to five), 29th August-11th October (52: 319 and 53: 48)

The claimed occurrences of single Mediterranean Black-headed Gulls on 19th and 25th September 1959 and of a Sabine's Gull on 4th September 1959, all at Portland Bill, Dorset (*Brit. Birds*, 53: 440), were subsequently withdrawn. The above lists do not include rejected observations mentioned in the "Recent reports and news" if the reference to them was as no more than "probable" or "unconfirmed".

Studies of less familiar birds

107. Needle-tailed Swift

Photographs by Irene Neufeldt and F. G. H. Allen

(Plates 55-58)

WE PARTICULARLY WELCOME these interesting photographs of such a little known bird as the Needle-tailed Swift (*Chaetura caudacuta*). The typical race of this species breeds in Siberia (much further west than is suggested by *The Handbook*—see below), extending south into Mongolia and Manchuria and east to Sakhalin, Japan and Korea. Another form with, apparently, a completely separated breeding range nests in northern India (*Ch. c. nudipes*); and a third race has been named from Formosa (*Ch. c. formosanus*). Also, there is a bird inhabiting the Malay Peninsula, Thailand, Indo-China, Sumatra and Java, which may or may not be a separate species; this is *Ch. (c.) cochinchinensis*, similar but for a dark throat. The species as a whole appears to winter exclusively in Australia and Tasmania. It has been recorded just three times in Great Britain, in 1846, 1879 and 1931, while Finland and Italy seem to be the only other European countries where it has been noted.

A quick comparison of plate 55 with plates 56 and 57 might make one think that they were of the same individual at the same place. In fact, however, they were taken five years and 5,000 miles apart at different seasons and show both the adult and the extremely similar juvenile. Descriptions of these plumages are given below the plates. One's impression from the picture in *The Handbook* is of a strikingly green-winged bird with the shafts of its tail-feathers protruding conspicuously. Note, however, that these spiny tips are practically never visible in the field and that the green is a structural gloss present only in fresh plumage. It quickly wears to a shiny blue or purple and this in turn becomes a dull black when the feathers are much worn. In fresh plumage the green gloss appears not only on the wings, rump and tail, but also to a lesser extent on the crown and nape. The best field-characters, to judge from published accounts and some Australian notes kindly provided by W. B. Alexander, are the combination of large size and extremely short, unforked tail, the white throat and the light horse-shoe formed by the white under tail-coverts and whitish flanks; when the birds are close the blue (green) wings and tail may show their colour and from above the light patch on the mantle is sometimes conspicuous.

Very little has been published about the breeding biology of the Needle-tailed Swift and so we are very glad to have the notes by Miss Irene Neufeldt and Dr. A. I. Ivanov, which appear below. It will be seen that they have a lot to add to *The Handbook* on distribution, habitat, nest-site, breeding-season, nest, clutch-size, egg-measurements, incubation and migrations. Indeed, much of their information—particularly on breeding—is in direct contradiction to what is there. Unfortunately, references are not listed in *The Handbook* and it is difficult to check the sources of the information given. However, in connection with the statement about the breeding-site in that work, it is interesting to note that Lack (1956) writes, "It is stated in various general works that the members of this group also breed in rocky cliffs on high mountains, but I cannot find any published reference to substantiate this." Incidentally, both Jahn (1942) and Austin and Kuroda (1953) give hollow trees as the regular nest-site in Japan (and yet the latter put the normal clutch there at two or three—*cf.* below).

More interesting still is what M. I. Lobko-Lobanovski and Miss Neufeldt have revealed about the actual nest. Most writers, including Lack, quote the statement that a bracket-shaped nest is attached to a vertical surface inside the hollow tree. The notes given below seem to show that this is quite wrong. It has, however, long been known that the closely related *Cb. gigantea* makes no nest but lays its eggs in a scrape at the bottom of a hollow (Baker 1934). These two species are sometimes placed in another genus (*Hirundapus*) and, although Lack and most other recent workers do not follow this separation, the fact that



PLATE 55. Needle-tailed Swift (*Chaetura caudacuta*), Queensland, Australia, November 1953. Nearly as big as the Alpine Swift but with a very short and unforked tail, it has a mainly brown body with creamy forehead, white throat, light patch on mantle and white horseshoe on flanks and undertail; tail and wings are glossy blue-black with white on the two inmost secondaries (pages 431-435)(photo: F. G. H. Allen)



PLATES 56 and 57. Juvenile Needle-tailed Swifts (*Chaetura caudacuta*), Zeya-Amur, U.S.S.R., August 1958—like adults but for browner foreheads and dark-tipped under tail-coverts. Note the spine-like extensions to the tail-shafts. In fresh



plumage young and adults have the blue parts glossed metallic green. Despite their similar setting, these photographs and plate 55 were taken 5,000 miles apart: nesting from Siberia to Japan, this species winters in Australasia (*photos: I. Neufeldt*)



PLATE 58. Nesting-place of Needle-tailed Swifts (*Chaetura caudacuta*), Zeya-Amur, U.S.S.R., August 1958. There they use hollow trees in overgrown clearings, especially the sites of former forest fires. They dive in at the top and the eggs (up to seven) are laid on any wood debris at the bottom. In this oak the hollow went down some $11\frac{1}{2}$ feet to within $1\frac{1}{2}$ feet of the ground (page 434) (photo: I. Neufeldt)

these birds nest in quite a different way from the rest of the genus *Chaetura* is rather significant. Further, as *cochinchinensis* builds bracket-nests on the walls of caves (Baker 1934), it is difficult to regard it as a race of *caudacuta* (or even as a species of *Hirundapus*?). Ptushenko (1951) treats these two birds as conspecific and he is presumably referring to *cochinchinensis* when he says that nesting in cliffs has been disputed but is now established for certain localities (see Harber 1955). In conclusion, it is interesting to note that Ptushenko describes the Needle-tailed Swift as the fastest bird in the U.S.S.R. in level flight, with speeds up to 170 km. per hour (about 106 m.p.h.).

I. J. FERGUSON-LEES

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SOME NOTES ON THE BIOLOGY OF THE NEEDLE-TAILED SWIFT IN SIBERIA

Within the limits of the Soviet Union the Needle-tailed Swift occurs in a large area from the Vasyugan River ($58^{\circ}30'N$, $78^{\circ}E$), a tributary of the Ob, eastwards through the taiga zone of Siberia to Sakhalin Island and the Kuriles, the northern limit of the range being at about 58° - $60^{\circ}N$. It is, however, rather seldom recorded in the western parts of this vast area and only locally common in SE Siberia (in Ussuriland and Amur-land, for instance). In fact, in spite of its wide distribution, very little is known about the habits of this remarkable bird in Siberia and a full account of its life cannot be given.

This swift's spring migration in Siberia lasts nearly a month. In Ussuriland Przhevalski (1870) and Cherski (1915) recorded the earliest arrivals on 6th and 8th May, while on the plateau of the Zeya and Amur Rivers, in 1958, I.N. noted the first on 19th May. In the southern part of Sakhalin Gizenko (1955) first observed the species on 26th May in 1948 and on 22nd May in 1949. On the other hand, Lobkobanovskii (1956), who was in the same region during 1950-1954, did not record it before 5th-7th June.

The first Needle-tailed Swift's nest examined in the Soviet Union was found by Gizenko in Sakhalin on 9th August 1950. It was in a hollow

larch and the six young, about a week off flying, weighed 107-110 gm. (data on Leningrad skins show 11 adult ♂♂ as 109-140 gm., av. 122.2, and 5 adult ♀♀ as 101-125 gm., av. 113.7). Lobko-Lobanovski describes the breeding biotope in Sakhalin as old and often swampy clearings and the sites of former forest fires. The essential features of such places, which are usually covered with a dense secondary growth, are scattered hollow trees broken by storms at a height of between three and seven metres (roughly 10-23 feet) above the ground. These tall stumps are usually hollow from top to bottom and all seven nests of the Needle-tailed Swift found by Lobko-Lobanovski were in such deep cavities in larches (*Larix*). The inside diameters varied from 35 to 50 cm. (roughly 14-19 inches) and the bottoms of the hollows were between three and four metres (10-13 feet) from the tops. There was no sign of any actual nest-construction: in every case the eggs had been laid on the floor of the hollow, on an accumulated mass of rotten wood mixed with numerous insect remains extending to a depth of 10-15 cm. (about 4-6 inches)—evidence that the same hollows are used for years. (These insects were chiefly beetles, but this swift's food also includes mayflies, wasps, bumble-bees, winged ants, ladybirds, ichneumons, etc.).

Lobko-Lobanovski found his first nests in 1953—a clutch of three fresh eggs on 7th July and broods of two and six young on 20th and 23rd August. The young of the smaller brood were nearly fully-fledged, but the six still had quite short primaries. His other four nests were located in the same area the following year—three clutches of six eggs and one of no less than seven. One of the clutches of six eggs was fresh and the remainder were well-incubated. The average dimensions of the 28 eggs in the two years were 32.27×22.34 mm. and the weights of the nine fresh eggs varied between 7.95 and 8.93 gm. In all of the incubated clutches there were noticeable differences in the stages of embryo development and it is evident that incubation begins with the first egg, or soon after.

In Sakhalin the autumn migration of the Needle-tailed Swifts takes place in September and the majority have departed by the 20th. Rarely, however, single ones are seen until mid or even late October.

On the Zeya-Amur plateau in Amurland, in 1958, I.N. found the Needle-tailed Swift uncommon but in biotopes similar to those described by Lobko-Lobanovski. There the species lives in stunted forests of oak (*Quercus*), likewise occupying overgrown clearings and the sites of former fires. The solitary remains of ruined forests of larch and pine (*Pinus*) provide most of the necessary stumps in this area, but the single nest found on 9th August was in a tall oak (plate 58): this was hollow to a depth of approximately 3.5 metres (about $11\frac{1}{2}$ feet) and the floor of the cavity was 0.5 metres ($1\frac{1}{2}$ feet) above the ground. The bottom was covered with a thick layer of rotten wood and there

were no traces of any outside material. Five young Needle-tailed Swifts, almost fully fledged (plates 56 and 57), were found in the nest.

IRENE NEUFELDT and A. I. IVANOV

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Observations from a light-vessel on Passerine immigration into the Wash in autumn 1956

By Michael Barry

INTRODUCTION

ALTHOUGH trans-North Sea migration in autumn has previously been studied from East Coast light-vessels, all the earlier accounts have been limited to observations made in the narrower southern part of the North Sea, and refer mainly to immigrants making the short crossing from the Low Countries (Clarke 1912, Owen 1953, Peakall 1956). Knowledge about migration across the much wider northern North Sea has hitherto been very scanty, but the recent introduction of radar as a means of study, and its immediate application in this area by Lack (1959), has been a tremendous step forward. One notable feature of Lack's results is the important south-westward migration that occurs from Scandinavia in autumn. Relevant visual observations made at sea are virtually non-existent, and it is the purpose of this paper to remedy this deficiency and to show how light-ship observation could be a valuable means of study complementary to radar.

The bulk of the paper is devoted to observations I made on the Lynn Well Light-vessel in mid-October 1956 (before radar had been applied to the study of bird-migration in this country, and unfortunately in a year when existing October radar records are incomplete). Some additional points have been drawn from my observations on the Dudgeon Light-vessel during the second half of September 1953, and have other notes made by the lightsmen there later that autumn.

THE POSITIONS OF THE LIGHT-VESSELS

The Lynn Well lies in the mouth of the Wash (Fig. 1), the open expanse of the North Sea being represented by the arc between NNW

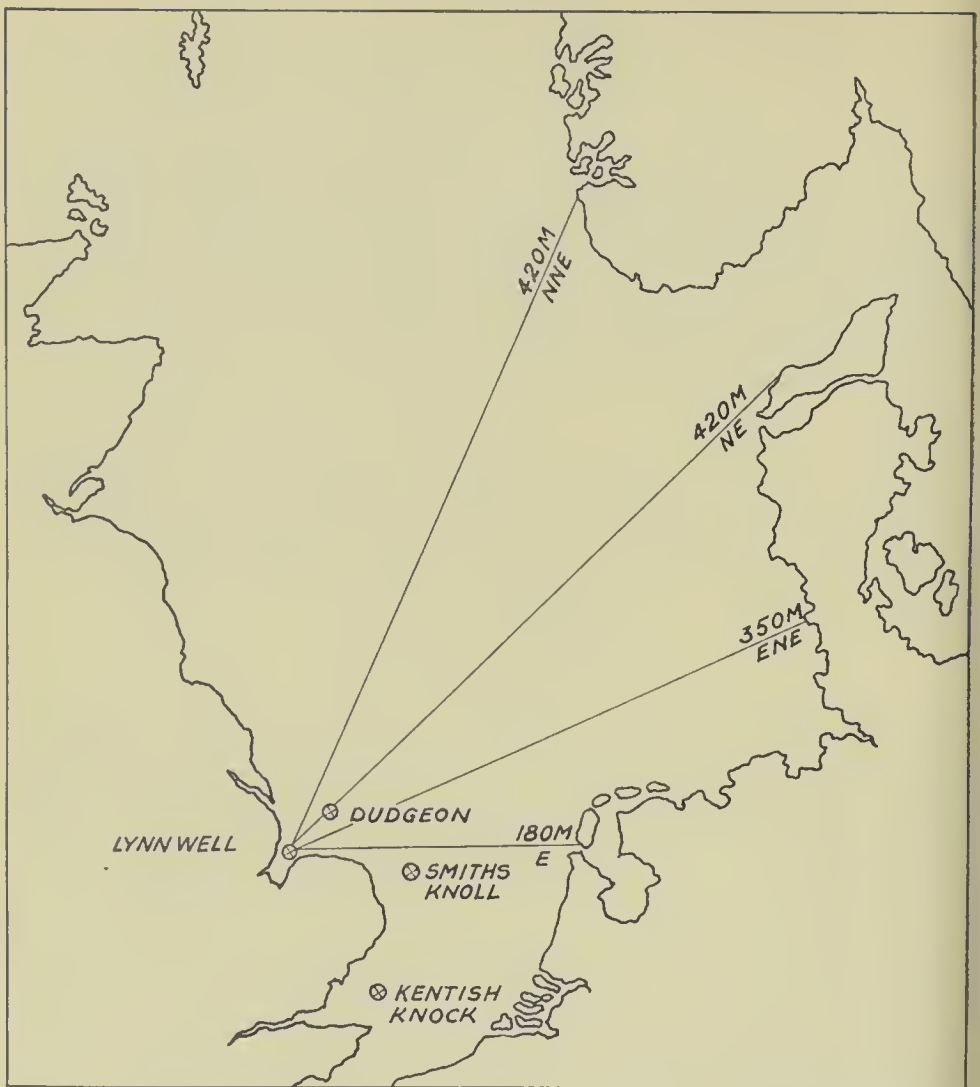


FIG. 1. The North Sea area to show the positions of the Lynn Well and Dudgeon light-vessels, and the bearings and distances of various parts of the Continental coast from the former. The Smith's Knoll and Kentish Knock, two other light-vessels from which immigration into south-east England has been studied, are also marked

and SE from the light-ship. The Hunstanton cliffs, six miles to the SSE, are the nearest point of the north Norfolk coast, and are more often visible than not. The low-lying Lincolnshire coast at Gibraltar Point, $6\frac{1}{2}$ miles NW, is visible only in clear conditions. Owing to its proximity to land, Lynn Well is not suitable for a planned study of arriving immigrants, but it was chosen primarily for the observation of migration across the mouth of the Wash.

The Dudgeon Light-vessel lies 30 miles NNW from the cliffs of Cromer, Norfolk, which are visible from it only in exceptional con-

ditions. Its situation is ideal for the study of migrants making the long sea-crossing and particularly recommends it for combined study with radar from the north Norfolk coast.

SUMMARY OF LYNN WELL OBSERVATIONS

Observation from Lynn Well extended from 10th to 23rd October 1956. Attention is confined here to the westward and south-westward migration of Skylarks (*Alanda arvensis*), Meadow Pipits (*Anthus pratensis*), thrushes (*Turdus* spp.) and Starlings (*Sturnus vulgaris*); notes on the migration of other species, and in other directions, have been summarised elsewhere (*Cambridge Bird Club Report 1956*). Meteorologically, this period fell into three phases which correlated closely with the nature and volume of immigration observed.

Between 10th and 14th October a series of fronts moved across Scandinavia, but the northern North Sea, lying on the edge of a ridge of high pressure extending from central Europe, experienced fine variably cloudy weather with gentle W to WNW winds. These were all cloudless calm days at Lynn Well with variable amounts of fog at sea-level, and no immigration was observed. Likewise, nothing occurred on the intervening nights, all of which were moonlit and clear except that of the 13th/14th which was marked by dense fog at sea-level, although conditions were clear above this.

On 14th October the ridge of high pressure over the British Isles became displaced before a front approaching from the west, and extended northwards into Scandinavia, subsequently moving slowly east. Cloudless almost calm conditions developed over the Continental coasts of the northern North Sea during the 14th and persisted until the 16th, while there was a sharp temperature drop in Scandinavia and the Baltic. Dense fog at Lynn Well on the 14th gradually cleared to give a cloudless afternoon, and five scattered Meadow Pipit parties passed SSW towards dusk. Birds of this species were heard with increasing frequency during the early part of the night when it was clear overhead, but when fog closed in at 23.00 they appeared immediately at the lantern with Skylarks. Starlings, thrushes and Chaffinches (*Fringilla coelebs*) began coming in after midnight, and at dawn on the 15th there were at least 200 Meadow Pipits and 100 Skylarks present, and about 50 each of Redwings (*Turdus musicus*), Goldcrests (*Regulus regulus*), Starlings and Chaffinches. Most disappeared SSW/SW when the fog lifted at dawn, a few pipits lingering to die during the day.

The 15th was fine with variable cloud and gentle easterly winds. Slight Skylark movement continued throughout the day (58 birds in 10 flocks) and occasional Chaffinches were seen, both species flying almost exclusively between S and SW. There was little else to

suggest that much migration was occurring until the sky became transiently overcast just after dusk, bringing Skylarks and Chaffinches into the lantern, about 30 of each accumulating until the clouds dispersed 40 minutes later.

Fog closed in again at 22.00 on the 15th/16th and, with increasing cloud, a few Starlings had arrived by midnight; their numbers steadily built up and by 01.00 small numbers of Skylarks, thrushes and finches (*Fringilla* spp.) were also present. The main arrivals seemed to occur between 01.00 and 03.00, and at dawn the estimated totals were about 5,000 Starlings and 1,000 Skylarks, 80 Chaffinches, 50 Redwings, and smaller numbers of other Passerine and non-Passerine species. As dawn broke, those Starlings that had found room to settle rose off the superstructure in vast flocks, reassembling to form an unbroken ring around the ship; in this extraordinary formation they encircled the light-vessel continuously for $1\frac{1}{4}$ hours in company with the Skylarks and Lapwings, keeping low above the water and approaching more closely between siren-blasts, all finally disappearing more or less suddenly into the fog at 07.15.

Large-scale immigration continued on the 16th, with at least 2,000 land-birds passing between 08.00 and 15.15, movement falling away sharply thereafter. The sky was thickly and uniformly overcast throughout the day, while poor visibility, at no time more than two or three miles, prevented the migrants from sighting land and therefore changing track. The tracks observed under these interesting conditions are given for the main species in Table I. It will be noted that the main track for all these species was SW and that this was most

TABLE I—TRACKS OF THE MAIN SPECIES AT THE LYNN WELL LIGHT-VESSEL ON 16TH OCTOBER 1956

In this table the first figure shows the number of birds and the second the number of flocks. Thus "37/4" indicates that there were four flocks totalling thirty-seven birds.

Direction	Lapwing (<i>Vanellus vanellus</i>)	Skylark (<i>Alda arvensis</i>)	Starling (<i>Sturnus vulgaris</i>)	Chaffinch (<i>Fringilla coelebs</i>)	Total flocks	% flocks
SE	2/1	—	14/2	—	3	2.5
SSE	—	—	—	—	—	0.0
S	7/1	17/1	122/13	21/1	16	13.5
SSW	—	3/1	275/11	5/2	14	11.8
SW	37/4	141/18	513/30	89/4	56	47.0
WSW	—	46/5	171/9	1/1	15	12.6
W	11/1	22/3	130/7	1/1	12	10.0
WNW	36/2	—	—	—	2	1.7
NW	—	3/1	—	—	1	0.9
Totals	93/9	232/29	1,225/72	117/9	119	100%

PASSERINE IMMIGRATION INTO THE WASH

TABLE II—VARIATION IN TRACKS OF STARLINGS (*Sturnus vulgaris*) AT THE LYNN WELL LIGHT-VESSEL ON 16TH OCTOBER 1956

Two flocks seen flying SE are not included in this table.

Time GMT	Wind	W	Number of flocks			S
			WSW	SW	SSW	
08.00-08.30	ESE ₂	—	1	—	—	—
08.30-09.00	SW ₁₋₂	—	—	2	—	—
09.00-09.30		1	1	7	—	—
09.30-10.00	SSW ₂	2	2	—	2	—
10.00-10.30		3	—	3	—	—
10.30-10.45	S ₁₋₂	—	4	3	—	—
10.45-11.00		1	—	3	—	1
11.00-11.30	S ₁₋₂	—	—	4	2	4
11.30-13.00			No observations			
13.00-13.30	S ₃	—	1	1	6	2
13.30-14.00	SSE ₃	—	—	4	1	2
14.00-14.30	SSE ₃	—	—	1	—	1
14.30-15.15	SSE ₃	—	—	2	—	3

marked in the Skylark and the Starling, the two most numerous. It will also be noted that there was a strong SSW to S element in the movements of the latter, and Table II shows that this was due to a shift in the directional tendency towards south that occurred around 11.15. These southward-moving Starlings may perhaps have set out from a different point on the Continental coast, but it is more likely that the directional shift was related to the change in the wind from SSW force 1-2 to SSE force 3. Similar changes in flight-direction of day-migrants have been observed on the Continent (Vleugel 1952, Tinbergen 1956, Mook *et al.* 1957) and have been variously interpreted.

Skylark passage occurred at a rate of about 25 birds per hour, with a pronounced peak between 10.00 and 11.00. A massive Starling peak between 09.00 and 10.00 (477 in large flocks) may have represented the arrival of birds that had accumulated around the outer light-vessels during the night, but thereafter passage settled down at an estimated 200 to 300 birds per hour. Virtually all the Chaffinches passed during the afternoon.

With a front approaching from the W the wind freshened late on the 16th and veered; by midnight a SSW gale was threatening the North Sea and only a few straggling Starlings were seen subsequently.

From the 17th to 23rd October a succession of fronts crossed the area; conditions were generally fine and variably cloudy, with moderate westerly winds. Observed immigration at Lynn Well was slight and confined to small scattered parties of Skylarks and Meadow Pipits which passed SSW/SW early each morning. Such movement was

slightly more marked on the 21st in virtually cloudless conditions (wind WSW force 3). The intervening nights were fine and moonlit and no birds were seen, but an overhead Redwing movement was audible at midnight on 21st/22nd October.

DISCUSSION

Snow (1953), reviewing visible migration in the British Isles, could give virtually no mention of SW immigration into Lincolnshire and north Norfolk. Rivière (1930), summarising the lightsmen's records, stated that the main direction of flight at the Lynn Well and the Dudgeon was east to west, and that SW and WSW movement past these light-vessels was only very slight. The incomplete records from the Dudgeon in the late autumn of 1953 fail to confirm this view and the present, though admittedly limited, observations from Lynn Well are directly contrary to it.

A very large immigration of winter-visitors into north Norfolk and Lincolnshire clearly occurred between 14th and 16th October 1956, and it is interesting to note that, although coinciding in part with a weekend, it seems to have been completely missed on land (*Cambridge Bird Club Report 1956*; *Lincolnshire Bird Report 1956*; *Norfolk Bird Report 1956*). The appearance of Meadow Pipits and Skylarks in the Wash late on the 14th with other Scandinavian breeding species (but relatively few Starlings) followed the development of calm, cold, clear weather in south Norway and north Jutland early on that day, conditions on the Dutch coast remaining cloudy with fog. Skylark arrival proceeded continuously over the next 40 hours, while Starling arrival was also continuous over the last 18 hours of the movement; the main track of both these species by day was SW. Lapwings and Chaffinches were much less numerous, but the latter species also showed a south-westward emphasis in direction. The reason for the later arrival of Starlings is uncertain; their first appearance in large numbers at midnight on the 15th/16th would be consistent with emigration from Holland at dusk, but their tracks past Lynn Well on the 16th suggest another more northerly point of departure. Starlings wintering in Britain are of Baltic (rather than Norwegian) origin, and their relatively small numbers on the night of the 14th/15th may be related to the fact that the temperature drop in the Baltic occurred 24 hours later than in southern Norway. Although limited in scope, these observations point clearly to large-scale departure from the Skagerrak and Jutland area, and direct south-westward migration across the widest part of the North Sea to Lincolnshire and north Norfolk. The prolonged continuous arrival of Skylarks and Starlings suggests that these two species had been setting out from the Continent both by day and by night.

The absence of observed westward migration between the 10th and the 14th may mean that no immigration was occurring; disturbed frontal weather was certainly prevalent in southern Scandinavia at the time. But in calm cloudless conditions, as prevailed in the Wash on these days, most of the migration may proceed at considerable height and remain undetected from the ground.

The slight SW/SSW migration noted between 17th and 23rd October, in mainly clear weather with moderate westerly winds, may be analogous to the frequent small (and occasional large) south-westward movements that radar shows to have occurred in late October 1957 under similar conditions—which are usually inhibitory to seaward departure from Holland (Lack 1959). Notwithstanding the absence of observed activity at Lynn Well, evidence that considerable immigration had occurred further to the east at this time lies in the massive westward Passerine movement along the north Norfolk coast at Hunstanton on 23rd October (*Cambridge Bird Club Report 1956*); these birds had presumably made the short sea-crossing from Holland.

The Meadow Pipit was a regular participant in the small SW/SSW movements during the latter part of the period at Lynn Well, and on the Dudgeon in September 1953; small early morning SSW/S movements of this species were seen on three occasions; these were quite distinct from the eastward movements also observed. The species occurred at night on one occasion at each light-vessel. Meadow Pipit migration, as seen at sea, usually takes the form of small, scattered, loosely-packed parties and single birds passing at irregular intervals. The detection on land of such immigration, unobstrusive enough at sea, must be almost impossible when the birds become merged into the coastal streams. Consequently, little is known about the westward migration of this species in autumn, although direct movement from Scandinavia seems likely.

Lack (1959) provides evidence beyond reasonable doubt of south-westward thrush migration direct from Scandinavia. My daytime light-ship records are scanty, but nearly all describe birds flying SW/S, usually in overcast conditions with or without rain. Such records have always been related to the appearance of Song Thrushes (*Turdus philomelos*), Blackbirds (*T. merula*) and Redwings at the lantern in considerable numbers on the preceding or following nights. Their times of arrival at each light-vessel (on one occasion at the Dudgeon large numbers appeared soon after nightfall) often suggest diurnal migration from Scandinavia, and Owen (1953) noted thrushes passing Kentish Knock at times that clearly indicated daylight departure from the Continent. The concept that the thrushes are predominantly night-migrants requires reassessment.

LIGHT-VESSEL AND COASTAL OBSERVATIONS AND RADAR

A light-vessel provides a fixed point at sea from which the true track of migrants may be recorded, anticipating and precluding the changes that may occur after the birds sight land. Whereas radar will also give this information, alone it does not appear able to supply such a precise quantitative picture of the species participating. But in contrast to the wide scope of radar, the area and height accessible to the visual observer are severely restricted and call for cautious interpretation of results; this applies with particular force at sea where migration is, in general, of a more diffuse nature than on land, and occurs at greater height. A constant problem is the uncertain but variable extent to which visible migration reflects the total migration that is occurring; Lack (1960) found that visible coastal passage in spring was misleading in assessing the amount of seaward departure, as shown by radar, and discussed the factors involved. On the other hand, when migration is occurring low over the water (as may be usual in the Skylark under most circumstances, and in other species when flying against a head-wind) it is undetectable by radar (Lack 1959), but provides abundant scope for lightship study.

Apart from the limitations of visual observation, the main drawback to coastal studies is that the direction of migrants incident to the coast may differ from their track at sea (Lack 1954, Browne 1956); this is particularly likely to be true after a long sea-crossing. Consequently, conclusions about their point of departure from the Continent must be largely based on indirect evidence. Thus, Murton (1959) who studied visible migration in N.E. Norfolk in November 1956, while noting that the direction from which the migrants came in from the sea varied with the wind, found that the main arrivals occurred in the first three hours after dawn. This is in contradistinction to the mid-morning peak to be expected of birds derived from Holland at dawn, and Murton argued that his observations were more consistent with departure at dusk from the Baltic region or Scandinavia. Similar arguments have been used in this paper, backed by the direct observation of track in poor visibility; beyond the sight of land visibility is immaterial and, with the exception of scattered individuals including drift-migrants and Meadow Pipits, passing birds show little tendency to react to a light-vessel. The lack of observed activity at Lynn Well on 23rd October, considered in relation to the enormous westward coasting movement only six miles away, perhaps emphasises that observations on a light-vessel so close to the coast give an accurate picture only in conditions of poor visibility.

Further radar studies will clarify the significance of coastal observations. The limitations of light-vessel work require definition in a

combined study with radar, from which the latter would profit by the complementary nature of visual observations at sea.

SUMMARY

(1) Some light-vessel observations on the arrival of winter-visitors in the Wash are described.

(2) The main participants of one very large influx had probably made the long sea-crossing direct from Scandinavia.

(3) Other small south-westward movements of Skylarks (*Alauda arvensis*) and Meadow Pipits (*Anthus pratensis*) may also have derived immediately from Scandinavia.

(4) The value of light-vessel observation is considered in relation to coastal observation and radar study.

(5) It is suggested that light-vessel observation would provide a valuable complementary means of study to the use of radar.

ACKNOWLEDGEMENTS

I am grateful to the Elder Brethren of the Corporation of Trinity House for their permission to visit the Lynn Well and Dudgeon Light-vessels; and my special thanks are due to the members of the Trinity House Service at Great Yarmouth, and particularly to the masters and crews of the two light-vessels, for their help and consideration.

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Notes

Little Ringed Plover "foot-tapping" to collect food.—On 2nd April 1960, at a reservoir near the Suffolk coast, I watched a Little Ringed Plover (*Charadrius dubius*) feeding on the muddy bottom of a drained pond. It was tripping methodically around and every now and then stretching out one leg (either being used) to tap its foot quickly several times on the mud in front of it. It would then dash forward and apparently pick up some morsel or other. I concluded the animal prey was being affected by the foot-tapping. I cannot remember seeing any other wader do this, though I have observed the more usual "marking time".

ROGER W. COLEMAN

[This "foot-tapping" or "foot-trembling" has been recorded in certain plovers (though not apparently this species) and may be confined to the Charadriiformes. It is analagous to the "spinning" or "piroetting" of phalaropes (*Phalaropus* spp.) and the "marking time" or "paddling" of gulls (*Larus* spp.) and other birds. Both paddling and foot-tapping appear to have two different functions. They cause certain earthworms (particularly *Allolobophora*) to rise to the surface, apparently because these have an innate reaction to the quivering of the soil which enables them to avoid their main enemy, the Mole (*Talpa europaea*). Lapwings (*Vanellus vanellus*) adopt the foot-tapping on meadowland for this reason, stretching one leg obliquely forward and rapidly quivering it on the ground. But the second and probably more common function of both tapping and paddling is to cause minute organisms to move and thus show themselves. The subject is more fully discussed by N. Tinbergen in *The Herring Gull's World* (London, 1953, pp. 33-35).—Eds.]

Ross's Gull in Northumberland.—On 30th April 1960 I found a dead Ross's Gull (*Rhodostethia rosea*) at Holywell Ponds, Seaton Delaval, Northumberland; it had been shot. Though it proved to be an adult male, and was generally in good plumage and quite fresh, it lacked the rosy tinge that is usually characteristic of this species. I skinned it roughly and then sent it to the Hancock Museum, Newcastle upon Tyne.

ALAN JOBLING

This bird was received at the Hancock Museum on 2nd May 1960 and has since been mounted for the museum's Bird Room. Almost midway in size between a Little Gull (*Larus minutus*) and a Kittiwake (*Rissa tridactyla*), the specimen is a uniform pale grey on the mantle and wings, while the head, under-parts and tail are white, except that the neck is completely encircled with a black collar about 5 mm. in

width. The secondaries have long white tips, but the only black on the wings is on the outer webs of the first primaries. (Though the white parts of the plumage showed no trace of the characteristic pinkish colour even when the bird arrived, the actual skin was covered in places with a pinkish-rose fat.) The tail is long (130 mm.) and graduated, but the wings are even longer in proportion (268 mm.) and project some 33 mm. beyond it. The bill measures 19 mm. and the tarsus 27 mm. These details were actually taken soon after the bird was received and, in particular, the colours of the soft parts were noted then: the bill was black and the iris almost black, while the orbital ring, interior of gape and tongue, and legs and feet were all orange-red. The stomach was empty except for a small quantity of black grit and sand. Some feathers were being renewed on the underparts.

S. E. COOK

[This is the first Northumberland, third British and fourteenth European record of this arctic gull (see *Brit. Birds*, 52: 423; and 53: 95). A female in Holland in 1958 (*Brit. Birds*, 52: 422-424 and plates 66-69) similarly lacked the rosy colour on the white parts and it was suggested that this might have been due either to its not having reached full sexual maturity or to its generally poor condition. These possibilities seem less applicable in the present case, but shortage of normal foods may have prevented its being in perfect plumage.—EDS.]

Rufous Turtle Dove in the Isles of Scilly.—On 2nd May 1960 Mr. Herbert Legg, an islander, informed us that he had seen a rather darker and larger dove flying with Turtle Doves (*Streptopelia turtur*) over St. Agnes, Isles of Scilly. The bird was briefly glimpsed by R.J.E., but it was not until the next day that we had good views of it. We then took detailed field notes and, on returning to the bird observatory and consulting *The Handbook*, identified it as a Rufous Turtle Dove (*Streptopelia orientalis*).

Except for a period of about an hour the bird associated with Turtle Doves, of which there had been a heavy influx on 1st May, and at all times it was extremely wary and difficult to approach. The following description was obtained over a total of about three hours, in bright sunlight and at distances down to 40 yards with binoculars and telescope:

Crown light grey; *cheeks* light brown tinged gingerish, with an indistinct darker brown line starting at bill and passing through eye; *nape* slightly darker brown than cheeks, again tinged ginger; *throat* pale greyish merging into cheeks and breast, not conspicuous except in bright sunlight; *breast* brownish-grey with pinkish tinge; *sides of neck* with a rather indistinct patch of black on grey speckling; *mantle and back* dark brownish-grey with rufous tinge; *primaries* charcoal-grey with slight rufous tinge; *rest of wings* chestnut, darker and richer than in the

Turtle Dove and with specklings more numerous, each speckle being formed by dark feathers with chestnut fringes; *belly* darkish grey-brown; *under tail-coverts* light grey merging into belly; *rump* a fairly darkish grey, but lighter than primaries, tail and back when seen from behind; *tail* charcoal-grey, with narrow light grey tips to feathers visible only at quite close range; *bill* brick-red; *legs* pinkish-red.

The bird could be readily picked out in flight, even at a considerable distance in the flock of Turtle Doves. When "caught" by the sun most of its upper-parts and wings showed a rufous or gingerish tinge. Unlike the Turtle Doves, it was never seen to spread its tail and this may have accounted for its sometimes appearing slimmer and more elongated or tapered than they. Distant views were also obtained by F. R. Trust, who was able to confirm its dark appearance and the lack of white in its tail. What was presumably the same bird was seen again on 6th May. This would appear to be the third British record.

R. J. ELVY, J. F. CARD, R. A. CARD and P. H. CROOK

[Mr. Derek Goodwin informs us that this species is easy to keep and breed in captivity, but that he has not seen any individuals advertised for sale or heard of any in this country since before the war.—EDS.]

Hawk Owl in Lancashire.—On 13th September 1959 I was walking with Mr. K. Parkinson near Bleasdale Fells, above Chipping, Lancashire, when I flushed from a rock a bird which at first sight I thought must be a Kestrel (*Falco tinnunculus*). It flew low along the hillside, then up a gully to another rock and finally into a stunted hawthorn where it perched in full view. From a distance of about 30 yards I could see that the bird was, in fact, an owl of a species which I did not recognise. Fortunately it was quite indifferent to our presence and we were able to approach to within ten feet of it. Notes were taken on the spot. Its length was about 14-15 inches, of which approximately one-third was made up by a noticeably long and rounded tail. It had large, almost white face-patches with a very dark brown border which was incomplete on the head. The head and back were dark brown mottled with fawn, while the under-parts were fawn closely barred with brown. The eyes were bright yellow with a dark ring. The bird stayed in the one position for about a quarter of an hour before flying away fast and low over the rough country. Later reference to text-books showed that it could only have been a Hawk Owl (*Surnia ulula*).

V. J. CONNOLLY

[There are only eight previous records of this species in the British Isles and this is the first since 1903. Bearing in mind the date and the locality, it is perhaps as likely that the bird was of the American race (*S. u. caparoch*) as the European form; both have been recorded here in the past.—EDS.]

Swifts fighting.—On 29th May 1960, near Bath, Somerset, I noticed a fluttering in a cottage garden which I was passing. This I found to be caused by two Swifts (*Apus apus*) lying on the ground, each with its claws in the breast of the other. Neither bird was able to free itself, but both lay quietly while, with difficulty, I extracted each claw in turn. After release and upon being launched into the air, both birds flew off apparently unharmed.

EDWARD N. ROPER

[Dr. David Lack has confirmed his statement in *Swifts in a Tower* (London, 1956, p. 30) that only two previous incidents of this kind have been recorded in the literature. He comments that it is of considerable biological interest that birds are able to fight with such determination as to leave themselves at the mercy of any predator.—EDS.]

Special review

The Helsinki Congress and the future

Proceedings of the XII International Ornithological Congress (Helsinki, 5th-12th June 1958). Edited by G. Bergman, K. O. Donner and L. von Haartman. Tilgmannin Kirjapaino, Helsinki, 1960. Vol. I, 436 pages; Vol. II, 384 pages; both with diagrams, maps and half-tone illustrations.

By a grievous stroke of fate, the very day after the review copies of these eagerly awaited *Proceedings* had been sent out, most of the stock was destroyed by a fire at the printer's office before it could be dispatched to the Congress participants. As all who know the Finns will at once realise, this cruel misfortune will certainly not deter or prevent them from getting the *Proceedings* distributed and, in fact, Dr. von Haartman tells us that preparation of a second edition began immediately, at the end of July. Nevertheless, there will inevitably be some delay before this is ready and I will sympathise with them in this extraordinary trouble. In view of the fact that there will be very few copies in existence until the new edition is ready, the *British Birds* review copy is being deposited with the Witherby Library at the Nature Conservancy, 19 Belgrave Square, London, S.W.1. It will be available for reference here pending the postponed publication.

In his preface the Congress's admirable General Secretary, Dr. Baron Lars von Haartman, refers to the great financial difficulties of publication (which must have been considerably aggravated by the disaster referred to above). He explains that papers have been printed in alphabetic order of authors' names with a minimum of revision and that no MSS. were rejected. This naturally throws on the reader (and, above all, the reviewer) the entire burden of trying to relate the various contributions according to subject and relevance, without even the benefit of a record of the all-too-brief discussions which helped in some

cases to illuminate, and in others merely to bewilder or frustrate, those who were actually present at the sessions. After a few preliminaries, therefore, the contents of Volume I run through from Hans Arn-Willi's paper on the Alpine Swift—a contribution to some extent superseded by the summary of his work that appeared in *British Birds* in 1959 (52: 221-225)—to the late Gustav Kramer's stimulating analysis of the functional relationships of increasing size to increasing speed of flight. Volume II opens with another paper in German, by Professor E. Kumari on the results of bird migration observation in the east Baltic region, and ends with Dr. W. B. Yapp's "Colonization of coniferous plantations by birds". Among the 97 papers, which average about $7\frac{1}{2}$ pages in length, there is a range of subject matter, breadth or specialisation, abstraction or detail, and of sheer quality or lack of it, which defies any general verdict. Among those which strike the present reviewer as most stimulating are Finnur Gudmundsson's challenging long-term analyses on "Some reflections on Ptarmigan cycles in Iceland", Professor V. C. Wynne-Edwards's acutely controversial "Overfishing principle applied to natural populations and their food resources", Dr. G. V. T. Matthews's "Examination of basic data in wildfowl counts", Dr. Ernst Mayr's introduction (as Chairman) to the symposium on adaptive evolution, Dr. M. Moynihan's "Some adaptations which help to promote gregariousness", Dr. P. H. Baldwin's "Overwintering of woodpeckers in Bark Beetle-infested spruce-fir forests of Colorado", Professor A. N. Formozov's paper (in French) on seed production in the coniferous forests of the U.S.S.R. and the invasion of western Europe by certain bird species, Dr. S. V. Kirikov's contribution (also in French) on changes in the distribution of birds in the European part of the Soviet Union during the 17th to 19th centuries (with maps of game-bird distributions), Professor Pontus Palmgren's review of "The distribution of the Finnish bird fauna", the enlarged English summary of F. and E. Sauer's "Orientation of nocturnal bird migrants by the stars", and Dr. Robert W. Storer's analysis of "Evolution in the diving birds". No doubt, however, others would choose differently with equal justification.

Yet any serious consideration of the entire contents can scarcely fail to show that only a minority of the papers have any claim to world or permanent significance. In fact, it is probable that the majority would not appear of more than normal interest or value if they were encountered in the regular ornithological journals of their countries, while quite a number might be thought to belong more properly in merely regional, local or ephemeral publications. It is even conceivable that national editors, uninhibited by the necessity for international diplomatic relations, might have rejected one or two as hardly worth

printing. To say this is in no way to criticise the present editors, who have done their job entirely in accordance with their duty. They have produced the *Proceedings* to a standard which is in every way able to stand comparison with those of previous congresses; and although the necessity for two volumes is regrettable the split certainly reduces unwieldiness.

There is an index of species and genera, and a list of birds seen during the excursions. The usual list of members is preceded by a statement that about 460 persons were present, out of 511 who applied to attend. The highest application totals were from Great Britain (110), Germany (83), Finland (60), U.S.A. (59) and Sweden (42). The General Secretary's report ably summarises the organisation and observes that the membership fees covered only a negligible part of the needs of the Congress. In fact, all who attended drew largely on the generosity of the Finns and their government, though they were passing through a severe economic crisis at the time.

Having considered these two volumes as a printed work, we must not forget that they also record and represent something with far wider implications—namely, the principal constitutional means for regular international contacts and relations in ornithological science. Taking, as we must, this latest example as a basis for judgement, how far are the International Ornithological Congresses doing their proper job successfully, and where are they falling short? It would be difficult for any informed person to give a reassuring reply to such questions. The thought that all is far from well with these congresses is thrusting itself into many minds. The importance of the problem forbids our neglecting this appropriate occasion for outlining it, in the hope of helping towards a solution.

Since the first International Ornithological Congress in Vienna in 1884, the biological field has become densely occupied by more or less regularly assembling international gatherings of overlapping membership. At least half-a-dozen of these are on a world scale, while the number involving ornithologists from two or more countries would be difficult to count. How is the serious worker to find the necessary time for participating in these ever-increasing and ever-lengthening conferences and still keep up with his own studies and with the many other claims on him? Clearly this is impossible without ruthless discrimination between those meetings which are really worth attending and those which are not. Into which category will future International Ornithological Congresses fall? Helsinki plainly shows the red light. A world list of leading ornithologists who did not find it worth attending in 1958 would be disturbingly long and of thought-provoking eminence. The next congress, in 1962, may provide the last chance of finding out why, and of stopping the rot.

Some of the critical factors are plain enough. The cost of attendance in money and time is becoming so high that it can only be justified by a programme and a level of discussion which are too good to miss. Yet congresses must compete with the growing effectiveness of other means of communication, written, visual and oral, which can probably give better results more cheaply except in the case of prolonged two-way discussion on a very high level, or of first-hand demonstration of situations and techniques which could not be adequately grasped through some other medium. Unless a high proportion of the ornithologists most active in advancing knowledge and in influencing future trends can feel assured that their attendance is essential and will unquestionably prove worth-while, no amount of social success or weight of numbers can save the situation.

Unfortunately it is only during a few days once every four years that the great majority of even those directly concerned meet these problems face to face. For the rest of the time the Permanent Executive Committee and the next host country have to struggle with them in isolation, overshadowed by the well-grounded fear of giving offence in some vocal quarters should they exercise the leadership and firm guidance which are manifestly essential if the reputation and value of these congresses is to be safeguarded.

Is it right that anyone whatever, regardless of his or her capacity to satisfy even the modest minimum standards of editors of national journals, should be free to submit to a congress without any authoritative scrutiny a paper which must then be given time in the all-too-few days available, as well as space in the heavily subsidised *Proceedings* that follow? Is it right that the main agenda should be dictated by the chance choice of subjects and by the initiative of particular contributors, rather than (as was so successfully done at Uppsala in 1950 and at the B.O.U. Centenary at Cambridge in 1959) by the considered selection of the most significant topics and of the best speakers to handle them by invitation? Is it sound policy to permit sessions to be grouped largely according to the language that papers happen to be delivered in, rather than according to subject?

Is it right, when payments by participants are so far below the costs of what they receive, that one country such as Great Britain should take up nearly a quarter of the places? What should be the attitude of the host country towards the possibility of swamping a congress by its own nationals or those of a close neighbour—a problem which is bound to arise acutely in, for example, Great Britain or Germany or the United States? What are the ethics and practical implications of the tendency for persons registered as members to ignore most of the indoor sessions and, in effect, to treat the congress as a convenient subsidised base for a guided bird-watching trip abroad? What indeed

should be the attitude towards field excursions, and how can they be prevented from being ruined by becoming swollen to football crowd proportions by people who obviously have no idea how to behave like true naturalists, and who make it impossible for others to watch or listen to the birds which the hosts have taken so much trouble and incurred so much risk to demonstrate? In fact, is it right that congresses should be held during the summer, often involving the loss of a season's work by serious researchers, rather than at some other time of year? Should there be any limit to the number of those attending, or any financial devices to favour serious participants and to make "passengers" pay the real full cost of their attendance?

The financing of such congresses deserves much more serious thought. Is it really right that a country like Finland, rich in ornithological talent and public spirit but far from wealthy materially, should be able to act as host only on such inequitable and almost crippling terms? Would not some of the money put up by official bodies, often against their better judgement, to pay for long trips by persons who may or may not pull their weight, be more usefully devoted to, say, the publication of a really good report of well-prepared discussions for which adequate time would have been assured? Should the attendance of those who could really advance the subject be given priority and, if so, how? Again, age composition must not be neglected: are enough of the coming leaders in ornithological studies given an opportunity to attend, or are they being shut out by semi-retired members better able to secure travel grants or pay their own fares?

Yet another complex of problems concerns the relation, already mentioned, of this regular ornithological congress to others which may overlap it. Helsinki was, in fact, immediately followed by the much larger and very successful International Zoological Congress in London, where a number of the same faces appeared, while only nine months later the B.O.U. Centenary at Cambridge gave rise to another international gathering on a more manageable scale and at a markedly higher level of discussion. The relation of the International Committee for Bird Preservation to the congress, although invaluable, adds to the problem of time and expense. Other international bodies, such as the International Union for the Conservation of Nature, and such regionally international gatherings as the annual North American Wildlife Conference, besides overlapping groupings like the game biologists, the ethologists and the taxonomists, all have their own meetings which may and do compete in more or less important ways. On the other hand, there may well be definite demands which embarrass these congresses and are not yet otherwise catered for. Some kind of network to enable expertly guided groups of ornithologists to enjoy rewarding field excursions in other countries is one of these.

It plainly does not make sense that people who merely want an organised bird trip abroad should be unable to fulfil this quite legitimate need without pretending to participate in a serious international conference, and thus dragging down its standard.

These questions are of obvious concern to the International Ornithological Committee. Unfortunately, however, the meetings of this Committee are rare, brief, overloaded and rushed, and it is not realistic to expect too much in the absence of more sustained interest and thought by the wider body of ornithologists, for whom, after all, the congresses exist. As it is now well under two years before the next one meets at Cornell University in America, it seems urgent that there should be some expression of opinion to assist the organisers, who are thoroughly alive to these problems and need support in tackling them. In so far as *British Birds* is concerned, our correspondence columns are open to those who would like to pursue the subject and we would welcome letters on it which are reasonably brief and to the point.

E.M.N.

Reviews

The Voices of Wild Birds in Nature (recordings). Recorded by Boris N. Weprinezev. Published by the All-Union Studio of Disc Recordings (No. 6227/8), 1960, and to be obtainable through Collets Record Shop, 70 New Oxford Street, London, W.C.1. Price probably about 28s. 8d.

This is certainly the first disc of Russian bird songs to be published in the U.S.S.R. and, so far as the author—a young amateur ornithologist—can ascertain, he is the first bird-watcher in the Soviet Union to attempt a collection of recordings. The record is a ten-inch long-player ($33\frac{1}{3}$ r.p.m.) and presents the voices of 20 different birds and one amphibian. 16 of the birds breed regularly in Britain and all have occurred here. The recordings were made during the spring of 1959, near the town of Zvenigorod, 40 miles from Moscow, using a battery-operated recorder with a tape speed of $7\frac{1}{2}$ inches per second and a “dynamic” microphone, but *no* parabolic reflector. The general quality is not up to the standard of, for example, the *Sveriges Radio* discs, but that is to be expected from a worker in his first year who has only a small recorder and no reflector. The disc is, however, a very commendable first publication worth every encouragement.

The names of the species are given on the label only in Russian and they are not always the same as those in H. Jorgensen's *Nomina Avium Europaeorum*. Therefore, to save others the not inconsiderable trouble

involved in identifying all the sounds, complete details of each side of the disc are given below. The accuracy of this list of both principal and background singers has been checked by Mr. Weprinezev himself. Main singers are given with scientific names, background singers in English only and in brackets. The times for each species include the verbal identification (which is, of course, in Russian).

SIDE 1

- Band 1 (4' 05") Morning in the forest:
Thrush Nightingale (*Luscinia luscinia*), Fieldfare (*Turdus pilaris*),
Golden Oriole (*Oriolus oriolus*),
Cuckoo (*Cuculus canorus*)
- Band 2 (0' 47") Chaffinch (*Fringilla coelebs*)
- Band 3 i (1' 39") Willow Warbler (*Phylloscopus trochilus*) (Blackcap, Blackbird, Cuckoo)
ii (0' 40") Chiffchaff (*Phylloscopus collybita*)
iii (0' 41") Wood Warbler (*Phylloscopus sibilatrix*) (Pied Flycatcher)
- Band 4 (0' 33") Wren (*Troglodytes troglodytes*)
- Band 5 (0' 27") Great Tit (*Parus major*)
- Band 6 (0' 30") Redwing (*Turdus musicus*)
- Band 7 (1' 38") Pied Flycatcher (*Muscicapa hypoleuca*)
- Band 8 (0' 50") Turtle Dove (*Streptopelia turtur*) (Tree Pipit, Willow Warbler)
- Band 9 (1' 10") Blackcap (*Sylvia atricapilla*)

SIDE 2

- Band 10 (1' 27") Whitethroat (*Sylvia communis*) (Garden Warbler)
- Band 11 (0' 36") Yellowhammer (*Emberiza citrinella*)
- Band 12 (0' 30") Scarlet Grosbeak (*Carpodacus erythrinus*)
- Band 13 (0' 52") Golden Oriole (*Oriolus oriolus*) (Snipe, Blackcap)
- Band 14 (0' 45") Grasshopper Warbler (*Locustella naevia*) (Cuckoo, Thrush Nightingale)
- Band 15 (0' 50") Cuckoo (*Cuculus canorus*) (Redwing, Song Thrush)
- Band 16 (0' 42") Lapwing (*Vanellus vanellus*) (Garden Warbler, Scarlet Grosbeak)
- Band 17 (0' 48") Spotted Crake (*Porzana porzana*) (Marsh Frog, Yellowhammer)
- Band 18 i (0' 25") Marsh Frog (*Rana ridibunda*)
ii (0' 31") Corncrake (*Crex crex*)
- Band 19 (5' 55") Thrush Nightingale (*Luscinia luscinia*) (Marsh Frog)

*N.B. The recording of the Yellowhammer on band 11 has been edited to bring phrases closer together.

The recordings, including those of the human voice, total 26' 21". Ignoring band 1 (the chorus) and band 18 (i) (the frog), the 20 birds average 1' 06" each, a figure which compares very favourably with other commercially available discs. Why the 0' 36" recording of the Yellowhammer should have been edited so that the song phrases are unnaturally close is difficult to understand when we are given 5' 55" of the admittedly beautiful Thrush Nightingale. When recordings are 'doctored' in this way it is vital that this be stated as Myles North and Eric Simms do in *Wiiherby's Sound-Guide to British Birds*.

The comparative use of this disc to the students of bird song is obvious.

J.H.R.B.

"Designing and using a reflector". A series of five articles by E. D. H. Johnson in *The Tape Recorder*, 1960 (vol. 2, no. 2, pp. 81 and 83; no. 3, pp. 127-128; no. 4, pp. 179 and 181; no. 5, pp. 229-230; no. 6, pp. 281 and 283). Published by John Borwick, 99 Mortimer Street, W.1. 1s. 6d. per issue.

It is worth drawing attention to this series of articles on the construction and use of a parabolic reflector, an instrument vital to the successful recording of most bird voices. The writer is one of the very few amateur British bird-watchers who have applied the use of the tape recorder to the collection of bird songs and calls. Perhaps this series of lucid articles will encourage more to enter the field. The first article explains the design and construction of the instrument, and the second how to set it up and test it. The equipment required to operate away from a mains supply (e.g. by using a car battery and a vibrator-converter) is the subject of part three, and in part four the opportunities for ornithological study are outlined and some recording experiences recounted. Further points of field technique emerge in the fifth and last essay.

J.H.R.B.

Recent reports and news

By I. J. Ferguson-Lees and Kenneth Williamson

The items here are largely unchecked reports, and must not be regarded as authenticated records. They are selected, on the present writers' judgment alone, from sources generally found to be reliable. Observers' names are usually omitted for reasons of space and in case a report is subsequently rejected, and none of the items will be mentioned in our annual Index. Readers are asked to submit anything of interest as quickly as possible.

This summary deals chiefly with the last ten days of August and the first half of September, though it also includes a few earlier reports back as far as July. It is mainly confined to the rarities because at this time of year new information is coming in every day and it is useless to attempt a background picture, even in the most general terms, until longer after the event.

A SECOND INFLUX OF NEARCTIC BIRDS

Last month (p. 405) we mentioned an early fall of Pectoral Sandpipers (*Calidris melanotos*) and Sabine's Gulls (*Xema sabini*) at the end of July. There was then a gap—apart from the Pectoral on the Cheshire side of the Dee (which we now learn stayed until the 26th)—and a further crop of reports of Nearctic species in the last ten days of August clearly represented a new influx. A total of seven more Pectoral Sandpipers included two separate birds at Perry Oaks (Middlesex) on 21st August and from the 26th to the 30th, the second and third of the autumn there; two together at Tresco (Isles of Scilly) on the 23rd and 24th; one trapped on Walland Marsh (Kent) on the 24th; one at Cley (Norfolk) from 28th August to at least 8th September; and one ringed at Malltraeth (Anglesey) on 11th September. There were also two observations of Bull-breasted Sandpipers (*Tryngites subruficollis*), one

RECENT REPORTS AND NEWS

at Freckleton (Lancashire) from 21st August to 4th September and the other on Cape Clear Island (Co. Cork) on 27th August, and it is relevant to add that we have heard of a Stilt Sandpiper (*Micropalama himantopus*) being seen in Sweden about this time; there is only one previous European record of this last species, in Yorkshire in 1954 (*Brit. Birds*, 48: 18-20). Most remarkable of all was a frigate-bird (*Fregata* sp.) seen on the Aberdeen coast north of the River Ythan on 27th August; only one has been recorded in Britain before—a Magnificent Frigate-bird (*F. magnificens*) in the Inner Hebrides in 1953 (*Brit. Birds*, 47: 58-59). Yet another American visitor was a Bonaparte's Gull (*Larus philadelphia*) seen at Titchfield Haven (Hampshire) on 5th September, while further reports of Sabine's Gulls included one off St. Catherine's Point (Isle of Wight) on 27th August and an immature at St. Ives (Cornwall) on 5th September. (On 22nd August three adult Sabine's Gulls appeared at weather station "Juliett" 400 miles west of SW Ireland and there was another there on 3rd September.) Finally, there were two immature Sabine's Gulls on the Fleet near Weymouth (Dorset) on 10th September and two more between the Isles of Scilly and the Wolf Rock on the 13th, these coinciding (as so often happens) with a huge influx of Grey Phalaropes (*Phalaropus fulicarius*) in the south-west, of which more next month.

OTHER WADERS AND GULLS, TERNS AND DUCKS

Apart from the American species, the only rare wader of the period was a Pratincole (*Glareola pratincola*) of the Black-winged phase "*nordmanni*" at Abberton Reservoir (Essex) from 28th August to at least 11th September. Incidentally, it is sobering to find that "Eastern Pratincoles" are now advertised for sale in London at £5 each, though enquiries may show these to be *G. maldivarum*. The only Temminck's Stints (*Calidris temminckii*) reported were at Allhallows (Kent) on 21st August, at Hanningfield Reservoir (Essex) from 28th August to at least 18th September, and at Colchester Hythe (Essex) on 8th September.

Apart from the regulars in Co. Durham and Essex, mentioned last month (p. 406), the only further reports of Mediterranean Black-headed Gulls (*Larus melanocephalus*) came from Portland Bill (Dorset): there the one seen on 21st August was noted at intervals up to at least 16th September, while different individuals were sighted on 22nd and 29th August. Portland, incidentally, had its usual series of Balearic Shearwaters (*Procellaria puffinus mauretanicus*), the maxima being 34 on 29th August and 4th September and 88 on the 12th; ones and twos were meanwhile identified at Dungeness (Kent), St. Ives (Cornwall) and Skokholm (Pembrokeshire).

The run of Gull-billed Terns (*Gelochelidon nilotica*) at Selsey Bill (Sussex) continued with one on 24th August (*cf. Brit. Birds*, 53: 367); much more unusual were one at Shotton Pools (Flintshire) on 1st August and no less than six at St. Catherine's Point (Isle of Wight) on the 28th. On the 27th there was also a Caspian Tern *Hydroprogne caspia* at St. Catherine's. At the end of August there was a big movement of Black Terns (*Chlidonias niger*) in Kent: coastal passage is regular in the Thames estuary and down the Channel throughout the autumn, but numbers on the 28th were quite exceptional and included 250-300 near Gillingham, parties of 115 and 186 (and a total of at least 630 in four hours) at Lower Hope Point, and about 2,000 in parties of up to 350 at Shellness. This movement was reflected all over the place in the following week, with small numbers as far north as Flintshire and the west and Co. Durham in the east, and on 27th August a gathering of about 30 between Purton and Frampton (Gloucestershire) included a White-winged Black Tern (*Ch. leucopterus*).

The Red-breasted Goose (*Branta ruficollis*) in Dorset, mentioned last month (p. 406), was last seen on 30th August. Red-crested Pochards (*Netta rufina*) included two at Stanton Harcourt (Oxfordshire) on 10th August and three at Abberton

Reservoir (Essex) from 11th September. The usual question mark hangs over these observations, as it does over three Ruddy Shelducks (*Casarca ferruginea*)—two males and a female—which were seen near Worthing (Sussex) from 8th September. A drake Ferruginous Duck (*Aythya nyroca*) was identified at the Brent Reservoir (Middlesex) on 8th September and stayed until the 11th.

PASSERINES AND NEAR-PASSERINES

There was the now usual crop of Melodious and Icterine Warblers (*Hippolais polyglotta* and *icterina*), the former being noted at Bardsey Island (Caernarvonshire) on 24th and 28th August, at Portland Bill (Dorset) from 27th August to 4th September, at Skokholm (Pembrokeshire) on 2nd and 13th September, and at Cape Clear Island (Co. Cork) on 5th September (two). Icterines appeared at Fair Isle on 25th August and 1st September, at Bardsey on 26th-27th August, at Cape Clear on 4th September (two, one until 7th) and 12th, at Portland on 4th and 6th September (separate individuals), at Cuckmere Haven (Sussex) on 11th September and at Cley (Norfolk) on the 12th. No less than four Greenish Warblers (*Phylloscopus trochiloides*) were reported, at Skokholm (Pembrokeshire) on 31st August, at Spurn (Yorkshire) on 4th September, at Scolt Head (Norfolk) next day and at Fair Isle during 7th-9th September. Another Bonelli's Warbler (*Ph. bonelli*) was identified on the south coast, this time at St. Catherine's Point (Isle of Wight) on 28th August. Barred Warblers (*Sylvia nisoria*) appeared at the Isle of May (Fife), Holy Island (Northumberland) and, more remarkable, St. Catherine's Point (Isle of Wight) in late August and there were odd ones at Blakeney Point (Norfolk) from 2nd September onwards. At Fair Isle there were even more than in 1959 (*cf. Brit. Birds*, 53 : 45-46) with 13 trapped between 25th August and 10th September and as many as eight being seen on one day; four were ringed at Foula (Shetland) at this time and there were two at Spurn (Yorkshire) in early September. In contrast, we have received only two reports of Red-breasted Flycatchers (*Muscicapa parva*), the other vagrant recorded in such exceptional numbers in 1959; both were adult males at Skokholm (Pembrokeshire), on 31st August and 12th September.

Tawny Pipits (*Anthus campestris*) were seen at Covehithe (Suffolk) on 6th September, at Portland (Dorset) on the 11th (two) and at Frinton (Essex) on the 13th. A juvenile Woodchat Shrike (*Lanius senator*) was seen at Bryher (Isles of Scilly) on 23rd and 25th August, and as it was unringed it was not the one trapped near-by at St. Angles on the 21st; there were Woodchats also at Fair Isle on 29th August and 1st September and at St. Agnes again about the 11th. Rose-coloured Starlings (*Sturnus roseus*) appeared then at Fair Isle and Foula (Shetland) on the 12th-13th and 13th respectively. From the 4th Scarlet Grosbeaks (*Carpodacus erythrinus*) were seen on Fair Isle—not more than two on any one day though three had been ringed by 10th September—but this is normal and much more remarkable was an immature trapped on Bardsey Island (Caernarvonshire) on 25th August. Fair Isle also had a Little Bunting (*Emberiza pusilla*) on 7th-8th September, and a male Black-headed Bunting (*E. melanocephala*), inevitably of suspect origin, was identified at Guildford (Surrey) on 18th and 28th August. Few Ortolan Buntings (*E. hortulana*) or Bluethroats (*Cyanosylvia svecica*) seem to have been seen during the period. Ortolans included singles at Fair Isle from 25th August to 1st September (with three on 28th-29th), at least two at Portland (Dorset) on 5th September and a similar number at Blakeney Point (Norfolk) during the 7th-9th, as well as a female at Skokholm (Pembrokeshire) on the 8th; but the only Bluethroats reported were two trapped at Dungeness (Kent) on 26th August, one at Cape Clear Island (Co. Cork) on the 28th and one at Spurn (Yorkshire) on 5th-6th September.

Finally, an Alpine Swift (*Apus melba*) was identified over the Pentland Hills (Midlothian) on 14th August.

Notice to Contributors

British Birds publishes material dealing with original observations on the birds of Britain and western Europe, or, where appropriate, on birds of this area as observed in other parts of their range. Except for records of rarities, papers and notes are normally accepted only on condition that the material is not being offered to any other journal. Photographs (glossy prints showing good contrast) and sketches are welcomed. Proofs of all contributions accepted are sent to authors before publication. After publication 20 separates of papers are sent free to authors; additional copies, for which a charge is made, can be provided if ordered when the proofs are returned.

Contributors are asked to observe the following points, attention to which saves the waste of much editorial time on trivial alterations:

1. Papers should be typewritten with double spacing, and on one side of the sheet only. Shorter contributions, if not typed, must be clearly written and with similar spacing. Failure to help in this way may result in delays to publication.

2. Notes should be worded as concisely as possible, and drawn up in the form in which they will be printed, with signature in block capitals and the writer's address clearly written on the same sheet. If more than one note is submitted, each should be on a separate sheet, with signature and address repeated. In the case of rarity records, any supporting description which is too detailed for publication should be attached separately.

3. Certain conventions of style and layout are essential to preserve the uniformity of any publication. Authors of papers in particular, especially of those containing systematic lists, reference lists, tables, etc., should consult the ones in this issue as a guide to general presentation. English names of species should have capital initials for each word, except after a hyphen (e.g. Willow Warbler, Black-tailed Godwit), but group terms should not (e.g. warblers, godwits). English names are those used in *The Handbook of British Birds*, with the exception of the changes listed in *British Birds* in January 1953 (46: 2-3). The scientific name of each species should be given (in brackets and underlined) immediately after the first mention of the English name. Subspecific names should not be used except where they are relevant to the discussion. It is sometimes more convenient to list scientific names in an appendix. Dates should take the form "1st January 1960" and no other, except in tables where they may be abbreviated to "1st Jan.", "Jan. 1st", or even "Jan. 1", whichever most suits the layout of the table concerned. It is particularly requested that authors should pay attention to reference lists, which otherwise cause much unnecessary work. These should take the following form: TUCKER, B. W. (1949): "Species and subspecies: a review for general ornithologists". *Brit. Birds*, 42: 129-134.

WITHERBY, H. F. (1894): *Forest Birds: Their Haunts and Habits*. London. p. 34.

Various other conventions concerning references, including their use in the text, should be noted by consulting examples in this issue.

4. Tables should be numbered with Roman numerals, and the title typed above in the style used in this issue. The title and any headings within the table should not be underlined, because this sometimes makes it difficult for the editor to indicate the type to be used. It is most important that the layout of each table should be carefully planned with an eye to its final appearance; above all, it should be borne in mind that tables must either fit into the width of a page, or be designed to fit a whole page lengthways. All tables should be self-explanatory.

5. Figures should be numbered with Arabic numerals, and the captions typed on a separate sheet. All line-drawings should be in Indian ink on good quality drawing paper (not of an absorbent nature) or, where necessary, on graph paper, but this must be light blue or very pale grey. It is best if maps, graphs, etc., are drawn twice the size of the final reproduction (ideally, therefore, for the normal 4" width the original should be 8" wide); sketches of birds, however, should be only slightly larger than the size at which it is intended they should appear. It is always most important to consider how each drawing will fit into the page. The neat insertion of lettering, numbers, arrows, etc., is perhaps the most difficult part of Indian ink drawing and, unless he has had considerable experience of this kind of work, an author should seek the aid of a skilled draughtsman.

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A brief history of bird-ringing in Great Britain and Ireland *Outside back cover*

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British Birds

VOL. 53 1960

RINGING SUPPLEMENT



Report on bird-ringing for 1959*

By Robert Spencer

Ringing Officer, B.T.O.

AFTER THE MODEST INCREASE of 1958, the 1959 total of 242,325 birds ringed represents a great leap forward. Only once before, in 1957, has there been an annual increment of more than 40,000 and a particularly satisfactory feature of this latest increase is that a large proportion of it (28.6%) is made up of nestlings. As might be expected, colonial sea-birds such as Herring Gull and Sandwich Tern contribute greatly to this, as do Blue Tit and Great Tit, but there has also been a distinct upward trend in the ringing of nestlings of many other species. It may be that these figures do no more than reflect the easy breeding conditions of a gracious summer, but the recoveries of birds marked as nestlings are generally so much more informative than those of birds ringed when free-flying that any increase is welcome, whatever the cause.

Birds of 223 species were ringed during the year, the following six of them for the first time: Mandarin Duck (I. M. Walker), Black-tailed Godwit (Wash Wader-Ringing Group and Major-General C. B. Wainwright), Great Reed Warbler (Dungeness), Booted Warbler (Fair Isle), Red-throated Pipit (Lundy) and Song Sparrow, *Melospiza melodia* (Fair Isle). The last-mentioned constituted the first European record of this North American species, while the ringing of the Red-throated Pipit means that all the pipits on the British list now feature in our tables. The list of species ringed since the inception of the scheme has been added to annually since 1945 and now stands at 286.

Readers who browse among the columns of Table II will note many figures which reflect the 1959 pattern of migration and the growing effectiveness of trapping techniques. The totals of 49 Barred Warblers

*This is the twenty-third report issued on behalf of the Bird-Ringing Committee, and is a publication of the British Trust for Ornithology. For the twenty-second report see *Brit. Birds*, 52: 441-492.

and 30 Red-breasted Flycatchers, for example, are another confirmation of the impression, generally gained at the time, that it was a noteworthy autumn for these species and are a measure, too, of how widely our nets are spread. The large numbers of waders were ringed partly as a result of experimental trapping techniques and partly as a result of growing proficiency with mist-nets. It was mist-nets, too, that were mainly responsible for the big total of Sand Martins caught. In a few seasons this species has climbed from a lowly position to fifth place in the table of numbers ringed annually and is producing such informative recoveries that it has been made the subject of the Trust's first ringing enquiry. Under this scheme, free rings are available to ringers concentrating on Sand Martins and it is hoped that this will lead to more ringers interesting themselves in the species and so to an increase in the recovery rate. A similar project seeks to foster the ringing of Razorbills and Guillemots in Scotland, an impressive series of recoveries in Norway having encouraged the view that the northerly colonies of these species are worthy of special attention. Finally, in offering free rings for Scottish Manx Shearwaters, the Committee wished to draw attention to the much neglected northern colonies whose relationship with the well-worked Irish Sea colonies remain unknown. This departure from the rule that ringers must pay for all the rings they use was made possible by an offer of financial assistance from the main funds of the Trust.

Table I reveals that more birds were recovered in the six years 1954-1959 than in the whole of the preceding 45 years and that over a tenth of the total number of recoveries relate to 1959 alone. There is thus a considerable volume of material to select from and, thanks to the generosity of the publishers, this report is the longest so far produced. In some species, such as Shag and Kittiwake, a condensed method of presentation has been adopted at the expense of a slight loss of detail. The space thus saved has been used to illustrate some of the notable recoveries—easily overlooked in the wealth of data—by means of maps (pages 484-485 and 495). Attention may also be drawn to Pochard, White-fronted Goose, Great Skua, Razorbill, Guillemot, Song Thrush, Redwing, Blackbird, Robin, Goldfinch and Linnet—species which have all produced fine series of recoveries. Among individual records of interest may be mentioned the Teal from the Hebrides in south Wales, the Water Rail ringed on passage at Dungeness and recovered in Ireland, the first British-ringed Lapwing reported from Sweden and the Fair Isle Bluethroat ringed on spring passage and recovered four days later in Belgium. The recovery of a Dunnock in Germany will surely give fresh inspiration to those ringers who, encouraged by the oversimplified criteria for the Continental race given in *The Handbook*, faithfully examine the wing formula of each specimen caught.

FINANCE

The Nature Conservancy renewed its support of the Ringing Scheme by giving a contract for a further five years, from 1st April 1959. The new contract provided a grant at a higher level, thus making possible the appointment of a fourth member of the staff. This was most opportune for, with the great increase in ringing and recoveries, the work at headquarters was in danger of getting out-of-hand. A grant of £100 from the main funds of the Trust enabled refurnishing of the office to be undertaken, and the publishers of *British Birds* made their annual grant of £25. All other expenses were met from the sale of rings.

Full accounts for 1959 have been published in the Annual Report of the British Trust for Ornithology.

COMMITTEE

The members of the Bird-Ringing Committee on 31st December 1959 were Sir Landsborough Thomson (Chairman), Miss E. P. Leach, J. S. Ash, Hugh Boyd, E. J. M. Buxton, J. C. Coulson, C. D. T. Minton, J. D. Macdonald (representing the Trustees of the British Museum), G. R. Mountfort, C. A. Norris, Major-General C. B. Wainwright and George Waterston; D. R. Wilson, R. K. Cornwallis and E. R. Parrinder (*ex officio*); and Robert Spencer (Secretary).

STAFF

Robert Spencer, J. L. F. Parslow (until 31st August), R. W. Hudson, Miss Anne Schramm and Mrs. K. E. I. Barham (from 1st November). Miss E. P. Leach, in an honorary capacity, had charge of all reports of rings from foreign schemes.

ACKNOWLEDGEMENTS

Grateful acknowledgement is made to the Trustees for accommodation at the British Museum (Natural History) and for permission to use the address of the museum on rings; to the Nature Conservancy for the financial support which alone makes it possible for the scheme to operate at its present level; and to H. F. and G. Witherby Ltd. for their annual grant. At the museum J. D. Macdonald and the staff of the Bird Room have helped us readily with many enquiries. Miss E. P. Leach, as in previous years, was an ever-present help in times of need. Derek Goodwin, A. G. Hurrell, Dr. W. Rydzewski and Mrs. G. Trust once again kindly helped with translations.

BRITISH BIRDS

PUBLICATIONS IN 1959

The following analyses have been published:

- M. J. Goodacre (1959): "The origin of winter visitors to the British Isles.
 1. Blackbird (*Turdus merula*)". *Bird Study*, 6: 37-50.
 M. J. Goodacre (1959): "The origin of winter visitors to the British Isles.
 2. Chaffinch (*Fringilla coelebs*)". *Bird Study*, 6: 102-108.
 M. J. Goodacre (1959): "The origin of winter visitors to the British Isles.
 3. Brambling (*Fringilla montifringilla*)". *Bird Study*, 6: 108-111.
 M. J. Goodacre (1959): "The origin of winter visitors to the British Isles.
 4. Starling (*Sturnus vulgaris*)". *Bird Study*, 6: 180-192.

The following papers make use of recoveries of the scheme:

- D. G. Andrew (1959): "Migrations of the Oystercatcher". *Brit. Birds*, 52: 216-219.
 J. C. Coulson and E. White (1959): "The post-fledging mortality of the Kittiwake". *Bird Study*, 6: 97-102.
 R. Spencer (1959): "Progress and prospects in ringing". *Ibis*, 101: 416-424.

Table I

NUMBERS OF BIRDS RINGED AND RECOVERED

			Ringed			Recovered
			Juv./Adult	Pullus*	Total	Total
1959 .. ..	..	..	184,837	57,488	242,325	6,949
1958 .. ..	..	..	155,414	45,421	200,835	6,374
1957 .. ..	..	..	137,060	49,286	186,346	5,497
1956 .. ..	..	..	104,665	40,069	144,734	4,808
1955 .. ..	..	..	90,585	35,718	126,303	4,063
1954 (1.10.53-31.12.54)†			77,809	36,684	114,493	3,043
1953 .. ..	..	..	63,318	35,199	98,517	Not recorded
1952 .. ..	..	..	56,867	39,459	96,326	
1951 .. ..	..	..	49,364	36,379	85,743	
1950 .. ..	..	..	42,112	33,994	76,106	
1949 .. ..	..	..	27,496	29,965	57,461	
1948 .. ..	..	..	18,413	20,911	39,324	

Grand total ringed

1909-1959 2,256,792

Grand total recovered

1909-1959 60,788

*An explanation of the term *pullus* or *pull*, appears on page 467.

†The ringing year formerly began on 1st October, but in 1954 it was decided to make it coincide with the calendar year and there was accordingly a "year" of 15 months.

REPORT ON BIRD-RINGING FOR 1959

Table II

RINGING AND RECOVERY TOTALS TO 31.12.59

(Compiled by R. W. Hudson)

	Ringed				Recovered	
	Juv./Adult	Pullus	1959 total	Grand total	1959	Grand total
Grebe	18	—	18	160	2	9
's Petrel	64	1	65	860	1	5
i Petrel	708	18	726	5,577	2	14
Shearwater	5,690	2,051	7,741	86,496	65	945
ar	184	344	528	4,842	12	67
et	178	893	1,071	20,648	91	863
orant	4	256	260	4,710	64	1,130
.. ..	166	1,256	1,422	8,439	71	815
i	2	335	337	4,274	39	644
rd	4,137	89	4,226	28,445	845	3,746
.. ..	3,979	11	3,990	28,702	526	4,593
ancy	25	—	25	133	3	17
all	3	—	3	135	3	27
on	50	—	50	2,059	30	376
l	22	—	22	517	8	101
der	16	29	45	460	14	100
d Duck	47	—	47	876	21	179
rd	19	1	20	198	10	37
.. ..	96	17	113	1,400	9	72
uck	32	124	156	850	6	43
Lag Goose	99	—	99	562	6	129
-fronted Goose	127	—	127	685	18	102
ooted Goose	1,111	—	1,111	11,820	276	1,957
a Goose	85	—	85	1,144	17	100
Swan	270	19	289	937	55	113
rd	1	24	25	952	2	49
owhawk	17	5	22	1,321	2	200
Harrier	—	7	7	118	1	13
arrier	—	49	49	403	2	51
gu's Harrier	—	5	5	219	2	33
ine	—	2	2	167	—	23
.. ..	5	8	13	600	5	88
l	30	110	140	2,410	19	294
rouse	—	—	—	1,528	2	176
lge	12	—	12	105	—	3
Rail	104	—	104	404	3	13
ake	10	1	11	711	—	12
en	378	13	391	5,000	18	159
.. ..	98	19	117	1,600	18	170
catcher	34	263	297	6,135	12	297
ig	120	2,307	2,427	69,892	63	1,419
l Plover	97	185	282	4,166	9	65
Ringed Plover	2	53	55	255	—	8
i Plover	12	4	16	553	1	17
one	94	—	94	463	2	7
.. ..	791	32	823	4,361	33	185
nipe	72	—	72	227	2	8
tock	17	5	22	5,670	4	435
.. ..	108	146	254	6,542	11	263
Sandpiper	20	—	20	106	2	4
on Sandpiper	226	68	294	3,697	4	28
ank	368	92	460	5,409	11	147
.. ..	57	—	57	158	1	4

BRITISH BIRDS

	Ringed				Recovered	
	Juv./Adult	Pullus	1959 total	Grand total	1959	Grand total
Dunlin	1,746	11	1,757	3,712	9	
Curlew Sandpiper	55	—	55	100	—	
Sanderling	24	—	24	128	2	
Ruff	28	—	28	135	2	
Stone Curlew	—	2	2	356	1	
Arctic Skua	12	103	115	912	—	
Great Skua	4	434	438	2,067	8	
Great Black-backed Gull ..	42	411	453	2,680	34	1
Lesser Black-backed Gull	54	1,518	1,572	23,389	87	9
Herring Gull	136	2,979	3,115	27,677	114	1,0
Common Gull	55	77	132	4,451	8	1
Black-headed Gull	285	3,193	3,478	47,753	255	2,3
Kittiwake	198	1,689	1,887	13,607	41	2
Common Tern	84	1,672	1,756	29,949	19	5
Arctic Tern	292	1,349	1,641	16,430	7	2
Roseate Tern	7	540	547	3,630	4	
Little Tern	10	115	125	1,936	4	
Sandwich Tern	9	3,393	3,402	34,495	52	5
Razorbill	158	431	589	10,424	22	2
Guillemot	105	313	418	7,200	23	2
Black Guillemot	19	37	56	555	—	
Puffin	620	355	975	13,257	5	
Stock Dove	8	56	64	1,994	16	1
Rock Dove	—	3	3	113	1	
Woodpigeon	55	291	346	7,068	38	4
Turtle Dove	34	31	65	1,517	6	
Cuckoo	59	23	82	1,858	3	
Barn Owl	13	34	47	1,233	14	1
Little Owl	14	40	54	1,538	10	1
Tawny Owl	11	90	101	2,566	7	1
Long-eared Owl	9	10	19	496	—	
Short-eared Owl	3	21	24	378	2	
Nightjar	8	19	27	424	1	
Swift	1,132	112	1,244	8,793	53	19
Kingfisher	118	6	124	1,047	2	4
Green Woodpecker	40	—	40	435	2	1
Great Spotted Woodpecker	71	—	71	769	3	3
Wryneck	13	—	13	556	1	1
Woodlark	—	18	18	391	—	
Skylark	347	203	550	8,426	3	5
Swallow	3,700	3,849	7,549	90,290	44	61
House Martin	1,266	39	1,305	20,634	10	19
Sand Martin	9,660	78	9,738	28,775	64	10
Raven	—	34	34	793	3	7
Carrion/Hooded Crow ..	20	108	128	3,622	12	21
Rook	115	450	565	9,533	68	60
Jackdaw	180	234	414	9,617	38	51
Magpie	40	106	146	3,020	8	12
Jay	65	41	106	1,795	12	12
Chough	6	20	26	242	2	1
Great Tit	4,110	2,500	6,610	50,960	117	83
Blue Tit	10,607	3,641	14,248	107,286	274	1,99
Coal Tit	345	298	643	6,496	4	8
Marsh Tit	329	49	378	2,128	—	2
Willow Tit	58	2	60	307	—	1
Long-tailed Tit	440	—	440	1,538	2	—
Bearded Tit	192	—	192	241	—	—
Nuthatch	95	95	190	2,133	8	5
Treecreeper	143	40	183	1,583	—	

REPORT ON BIRD-RINGING FOR 1959

Ringed				Recovered	
	Juv./Adult	Pullus	1959 total	Grand total	1959 Grand total
n	1,943	37	1,980	12,146	16 64
per	74	293	367	4,324	1 48
le Thrush	340	246	586	9,839	23 266
lfare	105	—	105	942	3 24
g Thrush	5,269	2,474	7,743	116,509	266 2,869
wing	1,088	—	1,088	5,503	19 64
g Ouzel	69	47	116	1,563	3 26
kbird	13,615	3,007	16,622	170,096	655 5,616
atear	1,134	235	1,369	14,079	9 62
echat	357	47	404	2,570	— 14
nchat	436	126	562	5,556	3 20
start	637	310	947	11,283	11 45
k Redstart	33	4	37	567	— 13
tingale	59	13	72	3,453	— 13
throat	23	—	23	145	1 2
n	6,074	889	6,963	71,255	150 1,654
shopper Warbler	107	9	116	651	— 1
Warbler	771	147	918	4,202	1 16
e Warbler	2,077	204	2,281	11,435	6 21
scap	554	21	575	3,645	4 16
ed Warbler	49	—	49	159	— —
en Warbler	366	49	415	4,399	1 7
ethroat	5,231	383	5,614	40,470	27 159
er Whitethroat	253	10	263	2,409	2 10
ow Warbler	4,685	913	5,598	51,792	10 124
chaff	1,907	44	1,951	10,574	5 24
ed Warbler	10	40	50	2,149	— 11
crest	2,123	—	2,123	4,993	1 7
rest	51	—	51	151	— —
ed Flycatcher	599	350	949	10,840	6 71
lycatcher	561	848	1,409	13,295	7 39
tock	5,490	680	6,170	48,899	59 659
ow Pipit	2,668	299	2,967	22,235	20 179
Pipit	114	48	162	3,579	1 6
Water Pipit	785	66	851	7,125	2 45
White Wagtail	1,856	466	2,322	18,807	45 324
Wagtail	141	100	241	2,445	3 13
w Wagtail <i>ssp.</i>	1,136	172	1,308	8,540	14 76
ing	84	—	84	113	— 2
acked Shrike	45	99	144	2,084	5 15
g	21,984	1,191	23,175	253,036	1,050 9,688
nch	6	2	8	185	— 2
finch	7,067	553	7,620	79,486	154 1,262
inch	1,159	85	1,244	3,643	20 38
.. ..	172	—	172	310	— 2
t	4,145	912	5,057	32,803	33 213
.. ..	181	—	181	1,989	— 6
oll	320	23	343	1,522	4 17
ch	1,163	142	1,305	5,687	24 96
ill	32	4	36	198	— 2
ch	5,633	414	6,047	76,735	61 867
oling	610	—	610	3,865	— 26
hammer	1,046	181	1,227	13,774	10 112
unting	120	29	149	796	— 15
unting	6	—	6	163	— —
unting	1,985	242	2,227	11,698	2 46
Bunting	480	—	480	2,109	3 8
Sparrow	15,472	604	16,076	84,896	232 1,174
parrow	3,009	380	3,389	11,172	11 52

BRITISH BIRDS

SPECIES OF WHICH LESS THAN 100 HAVE BEEN RINGED

(1959 total, grand total, 1959 recoveries and grand total recoveries
are given in that order)

Black-throated Diver	..	—	2	—	—	Hoopoe	..	..	..	1	7	1
Great Northern Diver	..	—	2	—	—	Lesser Spotted Woodpecker	3	70	—	—	—	—
Red-throated Diver	..	—	6	—	3	Short-toed Lark	..	..	1	3	—	—
Great Crested Grebe	..	2	25	—	—	Shore Lark	..	..	1	2	—	—
Red-necked Grebe	..	—	1	—	—	Golden Oriole	..	..	—	1	—	—
Slavonian Grebe	..	—	2	—	—	Crested Tit	..	..	1	47	—	—
Wilson's Petrel	..	—	1	—	—	Black-throated Thrush	..	—	1	—	—	—
Little Bittern	..	—	1	—	—	American Robin	..	..	—	1	—	—
Bittern	..	..	51	—	6	Siberian Thrush	..	..	—	1	—	—
Red-crested Pochard	..	—	15	1	4	Gray-cheeked Thrush	..	—	2	—	—	—
Scaup	..	..	1	23	2	6	Desert Wheatear	..	..	—	2	—
Mandarin Duck	..	..	1	1	—	—	Black-eared Wheatear	..	—	1	—	—
Goldeneye	..	..	—	5	—	—	Pied Wheatear	..	—	1	—	—
Long-tailed Duck	..	..	1	3	—	—	Thrush Nightingale	..	—	2	—	—
Velvet Scoter	..	..	—	1	—	1	Lanceolated Warbler	..	—	1	—	—
Common Scoter	..	..	1	11	—	1	Pallas's Grasshopper	..	—	1	—	—
Red-breasted Merganser	..	3	14	—	1	Warbler	..	..	—	1	—	—
Goosander	..	..	—	55	10	Great Reed Warbler	..	..	1	1	—	—
Smew	..	..	—	2	—	—	Marsh Warbler	..	8	61	—	—
Brent Goose	..	..	—	2	—	1	Paddyfield Warbler	..	—	1	—	—
Barnacle Goose	..	..	—	3	—	1	Aquatic Warbler	..	9	17	—	—
Whooper Swan	..	..	1	4	—	2	Thick-billed Warbler	..	—	1	—	—
Golden Eagle	..	..	4	37	2	3	Melodious Warbler	..	3	34	—	—
Hobby	..	..	3	53	—	4	Icterine Warbler	..	12	69	—	—
Red-footed Falcon	..	..	—	1	—	—	Olivaceous Warbler	..	1	3	—	—
Black Grouse	..	..	—	10	—	—	Booted Warbler	..	1	1	—	—
Capereauillie	..	..	—	3	—	—	Orphean Warbler	..	—	1	—	—
Red-legged Partridge	..	12	58	9	12	Subalpine Warbler	..	—	8	—	—	—
Quail	..	..	—	4	—	—	Dartford Warbler	..	30	82	—	—
Pheasant	..	..	—	58	—	4	Greenish Warbler	..	—	10	—	—
Spotted Crake	..	..	1	7	—	—	Bonelli's Warbler	..	2	3	—	—
Kentish Plover	..	..	—	1	—	—	Arctic Warbler	..	3	4	—	—
Grey Plover	..	..	31	43	1	2	Yellow-browed Warbler	..	5	38	—	—
Dotterel	..	..	2	30	—	—	Pallas's Warbler	..	—	2	—	—
Whimbrel	..	..	1	94	—	1	Yellowthroat	..	—	1	—	—
Black-tailed Godwit	..	8	8	—	—	Northern Waterthrush	..	—	1	—	—	—
Bar-tailed Godwit	..	3	40	—	—	Red-breasted Flycatcher	..	30	87	—	—	—
Wood Sandpiper	..	4	49	—	—	Richard's Pipit	..	—	1	—	—	—
Spotted Redshank	..	—	13	—	1	Tawny Pipit	..	—	2	—	—	—
Greenshank	..	18	70	1	3	Pechora Pipit	..	—	1	—	—	—
Purple Sandpiper	..	40	70	—	—	Red-throated Pipit	..	1	1	—	—	—
Little Stint	..	23	96	1	2	Yellow-headed Wagtail	..	—	2	—	—	—
Temminck's Stint	..	—	3	—	—	Great Grey Shrike	..	5	37	—	—	—
White-rumped Sandpiper	..	—	1	—	—	Lesser Grey Shrike	..	—	5	—	—	—
Pectoral Sandpiper	..	1	5	—	—	Woodchat Shrike	..	4	29	—	—	—
Western Sandpiper	..	—	1	—	—	Roscoloured Starling	..	—	1	—	—	—
Buff-breasted Sandpiper	..	1	2	1	1	Baltimore Oriole	..	—	1	—	—	—
Avocet	..	..	—	1	—	—	Summer Tanager	..	—	1	—	—
Grey Phalarope	..	3	8	—	—	Scarlet Grosbeak	..	7	20	—	—	—
Red-necked Phalarope	..	1	22	—	—	Pine Grosbeak	..	—	1	—	—	—
Glaucous Gull	..	2	4	—	1	Black-headed Bunting	..	—	1	—	—	—
Little Gull	..	..	—	1	—	1	Red-headed Bunting	..	2	6	—	—
Black Tern	..	..	—	1	—	—	Yellow-breasted Bunting	..	—	2	—	—
Gull-billed Tern	..	..	—	1	—	1	Ortolan Bunting	..	2	22	—	—
Little Auk	..	..	—	15	—	2	Rustie Bunting	..	1	6	—	—
Collared Dove	..	4	6	—	—	Little Bunting	..	2	9	—	—	—
Scops Owl	..	..	—	1	—	—	Song Sparrow	..	1	1	—	—
Snowy Owl	..	..	—	1	—	—	Lapland Bunting	..	10	43	—	—

REPORT ON BIRD-RINGING FOR 1959

Table III

NUMBERS AND DISTRIBUTION OF RINGERS (as at 31.12.59)

ENGLAND <i>County</i>	<i>Category of permit</i>									
	A	B	C	Total						
Yorkshire	60	13	13	86						
Isle of Man	4	—	—	4						
SCOTLAND	<i>Category of permit</i>									
<i>County</i>	A	B	C	Total						
Aberdeenshire	2	2	—	4						
Angus	—	1	—	1						
Ayrshire	2	—	—	2						
Berwickshire	2	—	—	2						
Bute	1	—	—	1						
Dumfries-shire	2	—	—	2						
Fife	4	—	—	4						
Inverness-shire	5	—	2	7						
Kirkcudbright	2	—	—	2						
Lanarkshire	2	—	—	2						
Midlothian	10	4	1	15						
Orkney	1	—	—	1						
Ross-shire	1	—	1	2						
Shetland	—	2	—	2						
Stirlingshire	2	—	—	2						
Sutherland	1	—	—	1						
Wigtownshire	1	—	—	1						
WALES	<i>Category of permit</i>									
<i>County</i>	A	B	C	Total						
Breconshire	1	—	1	2						
Caernarvonshire	2	—	—	2						
Denbighshire	1	—	—	1						
Flintshire	1	—	—	1						
Glamorgan	7	—	—	7						
Pembrokeshire	2	2	1	5						
IRELAND	<i>Category of permit</i>									
<i>County</i>	A	B	C	Total						
Antrim	3	3	1	7						
Down	4	3	3	10						
Dublin	2	—	—	2						
Kildare	1	—	—	1						

KEY TO RINGERS' INITIALS IN LIST OF RECOVERIES BELOW

HEA	H. E. Axell	CLC	the late C. L. Collenette
JMSA	J. M. S. Arnott	DBC	Dingle Bird Club
JSA	J. S. Ash	EC	E. Cohen
JWA	J. W. Allen	JAC	J. A. Cantley
RWA	R. W. Arthur	JCC	J. C. Coulson
DB	D. Boddington	MJC	M. J. Cowlard
EB	E. Balfour	RC	R. Chislett
FAB	F. A. Bak	RPC	R. P. Cockbain
GB	G. Beven	WSC	the late W. S. Cowin
GCB	G. C. Byford	AD	A. Darlington
JAB	J. A. Benington	EAGD	E. A. G. Duffey
JASB	J. A. S. Borrett	GD	G. Downey
RSB	R. S. Bailey	GAD	G. A. Dangerfield
TBB	T. B. Bagenal	PRE	P. R. Evans
AWC	A. W. Cundall	WJE	W. J. Eggeling
CBC	Cambridge Bird Club	JF	J. Fisher

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JEF	J. E. Flynn	MPMR	M. P. M. Richards
JKF	J. K. Fenton	RWR	R. W. Robson
MAFF	Ministry of Agriculture, Fisheries and Food	BS	Bryanston School
ROMF	R. O. M. Ford	CMRS	Calf of Man Ringing Station
FGG	F. G. Grey	DJS	D. J. Slinn
GRG	Guildford Ringing Group	HS	H. Schreiber
JGa	J. Garstang	HSS	Halifax Scientific Society
JG	J. Grierson	JS	J. Stafford
DFH	D. F. Harle	LNHS	London Natural History Society
HGH	H. G. Hurrell	MSJS	M. S. J. Snoxell
MPH	M. P. Harris	OOS	Oxford Ornithological Society
NH	N. Henson	PELS	P. E. L. Simmonds
RFH	R. F. Hemsley	PHS	P. H. Saunders
WH	W. Howe	RS	R. Stokoe
RJJ	R. J. Jackson	RRS	Romford Ringing Station
JEK	J. E. King	RWJS	R. W. J. Smith
LK	Miss L. Kennedy	SS	Sedbergh School
RAFK	R. A. F. Kemp	SBRS	Sandwich Bay Ringing Station
HL	H. Lapworth	SHS	S. H. Sporne
JL	J. Lees	SNHS	Sorby Natural History Society
RL	Miss R. Levy	WNS	Wharfedale Naturalists' Society
ATM	A. T. Macmillan	CJRT	C. J. R. Thorne
BAEM	B. A. E. Marr	RFT	R. F. Thearle
CLM	C. L. Maingay	TT	T. Todd
GRM	G. R. Mountfort	AEV	A. E. Vine
JMM	J. M. McMeeking	ABW	A. B. Walker
JRM	J. R. Mather	ACW	A. C. Whiteside
PPM	P. P. Mackie	AMW	A. M. Woods
JBN	J. B. Nelson	CW	C. Winn
ABO	A. B. Old	CBW	C. B. Wainwright
BBO	Bardsey Bird Observatory	DCHW	D. C. H. Worsfold
BrBO	Bradwell Bird Observatory	DRW	D. R. Wilson
CBO	Cley Bird Observatory	IMW	I. M. Walker
DBO	Dungeness Bird Observatory	JW	J. Wilson
GFO	G. F. Oates	MW	Mrs. M. Waller
MHBO	Monks' House Bird Observa- tory	PW	P. James Wilson
SABO	St. Agnes Bird Observatory	PJW	P. John Wilson
SBO	Skokholm Bird Observatory	RGW	R. G. Wheeler
SKBO	St. Kilda Bird Observatory	C&C	Campbell & Campbell
AP	A. Pettet	CE&Q	Carter, Edwards & Quinn
ACP	A. C. Parker	C&L	Clissold & Little
DP	D. Parr	C&P	Coulson & Phillipson
EGP	E. G. Philp	C&PM	C. & P. Minton
EMP	Miss E. M. Palmer	D&Q	Dickens & Quin
FJP	F. J. Poynter	D&RC	D. & R. Cormack
HP	H. Pease	D&SC	Misses D. & S. Crofts
IJP	I. J. Patterson	F&H	Felsteads & Hutchins
IVBP	I. V. Balfour Paul	G&W	Glanville & Walker
LAP	L. A. Pownall	H&M	Hamilton & Macgregor
MJHP	M. J. H. Page	H&W	Hurrell & Waite
WMP	W. M. Peet	ND&N	Northumberland, Durham & Newcastle N.H.S.
DAR	D. A. Ratcliffe	W&M	Watts & McConville
JR	J. Reynolds		

Ringers' initials are omitted from the recovery list below when the ringing was carried out: (i) at one of the following observatories—Bardsey, Cley, Copland, Dungeness, Fair Isle, Gibraltar Point, Lundy, Isle of May, Portland, Great Saltee, Skokholm and Spurn; (ii) at Abberton Reservoir—where all ringing is undertaken by Major-General C. B. Wainwright; (iii) on the Farne Islands, where all ringing is organised by the Northumberland, Durham & Newcastle N.H.S.; (iv) by the Wildfowl Trust (nearly all ducks and geese).

Selected list of recoveries reported during 1959

The following list is highly selective. To indicate the quantity and nature of the material omitted the total number of recoveries is stated in brackets after the scientific name of each species, followed by the minimum movement, in miles, qualify for inclusion. All foreign recoveries are either given in full or mentioned in the summaries. Species which produced only local recoveries are left out but the individual totals thus omitted are listed in Table II.

to symbols and terms

Ring number: Where this is in italics the ring has been returned.

Age: pull. (pullus)—nestling or chick, *not yet flying*;
 juv.—young, *able to fly freely*;
 1st W.—bird in its first winter;
 1st S.—bird in its first summer;
 f.g.—full-grown, age uncertain;
 ad.—adult; at least one year old.

Sex: ♂—male;
 ♀—female.

Manner of recovery: v—caught or trapped, and released with ring;
 +—shot or killed by Man;
 ×—found dead or dying;
 × A—found long dead;
 ()—caught or trapped alive, and not released, or released but with ring removed;
 [/?/]—manner of recovery unknown.

Date of recovery: Where this is unknown the date of the reporting letter is given in brackets.

Distance: The distance, given in miles, and the directions are approximate.

Arrangement of entry: Recoveries are arranged by species, and within the species usually by ringing locality from north to south. Ringing details are given on the first line and recovery data on the second.

Symbol "O", indicating bird breeding or bred at place of ringing, has been dispensed with. In practice it was generally found possible to apply the symbol only to birds ringed as pulli.

Little Grebe (*Podiceps ruficollis*) (2: 5 miles)

80 ad. 7.9.58 Abberton: 51°50'N. 0°53'E. (Essex)
 [/?] (6.10.59) Oundle (Northampton) 70m. NW.

Manx Shearwater (*Procellaria puffinus*) (65: 150 miles)

705 ad. 16.5.53 Skokholm: 51°42'N. 5°16'W. (Pembroke)
 v 5.7.56 Skokholm
 × A 27.8.59 near Port Patrick (Wigtown) 210m. N.

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AT20787	ad.	4.5.54	Skokholm
	×	c. 20.5.59	near Faro: 37°01'N. 7°56'W. (Algarve) Portugal
AT29155	ad.	19.6.55	Skokholm
	×	11.9.59	Tarbert, Kintyre (Argyll) 285m. N.
AT55990	ad.	10.4.58	Skokholm
	×	28.7.59	Seascale (Cumberland) 200m. NNE.
AT56242	ad.	16.4.58	Skokholm
	×	c. 15.6.59	St. Annes-on-Sea (Lancashire) 170m. NE.
3057592	ad.	19.8.58	Skokholm
	×	(5.5.59)	Holmrook (Cumberland) 195m. NE.
2024579	ad.	9.7.59	Skokholm
	×	(25.8.59)	Sea Mill (Ayr) 270m. N.

In addition, 19 Manx Shearwaters were recovered in France and two in north Spain, all between March and August. One bird had been ringed on Anne Scilly, the remainder on Skokholm.

Fulmar (*Fulmarus glacialis*) (12: 100 miles)

AT59433	ad.	27.7.58	Fair Isle: 59°32'N. 1°37'W. (Shetland)
	v	22.2.59	off Scarborough (York) 360m. SSE.
AT13479	pull.	26.8.54	Sula Sgeir: 59°06'N. 6°10'W. Outer Hebrides JF
	()	21.3.59	Suduroy: c. 61°30'N. 6°45'W. Faeroes
AT58087	pull.	22.8.58	Shiant Isles: 57°55'N. 6°20'W. Outer Hebrides MPMR
	()	17.8.59	off Newfoundland: 48°42'N. 51°31'W.
AT58132	pull.	25.8.58	Shiant Isles MPMR
	()	7.10.59	off Newfoundland: 47°59'N. 48°33'W.
AT34206	pull.	10.7.56	St. Kilda: 57°49'N. 8°34'W. Outer Hebrides DRW
	()	31.3.59	off Newfoundland: c. 48°00'N. 47°30'W.
AT34235	pull.	10.7.56	St. Kilda DRW
	()	9.4.59	off SW. Ireland: 51°40'N. 15°00'W.
AT42656	pull.	21.7.56	Maughold Head: 54°18'N. 4°19'W. Isle of Man WSC
	()	13.9.59	off Outer Hebrides: 57°45'N. 8°10'W.

Gannet (*Sula bassana*) (91: 200 miles)

514761	pull.	10.7.55	Bass Rock: 56°04'N. 2°38'W. (East Lothian) JEK
	×	16.3.59	Yell (Shetland) 320m. N.
518341	pull.	1.7.58	Bass Rock IVBP
	×	end 8.59	Le Grau-du-Roi: 43°32'N. 4°08'E. (Gard) France
518535	pull.	1.7.58	Bass Rock IVBP
	×	20.8.59	Ingoldmells (Lincoln) 240m. SE.
134908	ad.	6.8.58	Bass Rock MIIBO
	×	26.12.59	Foulness (Essex) 340m. SSE.
520627	pull.	5.7.59	Bass Rock JEK
	×	10.12.59	Tarbert, Harris, Outer Hebrides 200m. NW.
516518	pull.	9.8.59	Bass Rock C&P
	×	30.10.59	near Evron: 48°11'N. 0°22'W. (Mayenne) France

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04733	pull. ()	20.8.59 23.11.59	Bass Rock ATM off Canary Isles: $c.27^{\circ}08'N. 13^{\circ}30'W.$
04764	pull. x	20.8.59 12.11.59	Bass Rock ATM Bannow Isle (Wexford) 310m. SW.
089	pull. x	22.7.56 (7.11.59)	Ailsa Craig: $55^{\circ}13'N. 5^{\circ}07'W.$ (Ayr) D&RC Torrox: $36^{\circ}46'N. 3^{\circ}57'W.$ (Malaga) Spain
903	pull. v	7.7.55 19.4.59	Grassholm: $51^{\circ}44'N. 5^{\circ}29'W.$ (Pembroke) SBO Pleinmont Point, Guernsey 200m. SE.
731	ad. x	26.5.59 14.8.59	Grassholm SBO near Eyton (Shropshire) 140m. NE.

The recovery locality of 516518 is well inland in France. In addition to the above, 40 birds were recovered outside British coastal waters as summarised in Table A.

TABLE A—REGIONS AND MONTHS OF RECOVERIES OF GANNETS (*Sula bassana*)

Month of recovery	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
Sweden and Denmark	—	—	1	2	—	—	—	—	—	—	1	—
Ireland and Channel Islands	—	—	4	—	—	1	—	—	—	—	—	1
North Sea	1	1	1	—	—	—	—	—	—	—	1	—
France	1	1	6	2	—	1	—	—	1	2	—	—
Spain	—	—	—	—	—	—	—	—	—	1	—	—
Africa	—	—	(1)	3	2	2	3	—	—	—	—	—

NOTE. Tables A-H are subject to error in cases where it has been necessary to assume that the month of recovery was approximately that of the letter reporting it, whereas the bird may have been dead for some time before being found or reported. Records of this type are bracketed when they are the only ones for the months concerned, but this treatment is not, of course, possible when there are several records for the same month.

Cormorant (*Phalacrocorax carbo*) (64: 150 miles)

93	pull. x	24.6.57 summer 1959	near Nigg: $57^{\circ}41'N. 3^{\circ}59'W.$ (Ross) JL near Creetown (Kirkcudbright) 195m. S.
54	pull. x	1.8.58 16.2.59	Farne Islands: $55^{\circ}37'N. 1^{\circ}37'W.$ (Northumberland) Rye Harbour (Sussex) 340m. SSE.
45	pull. +	1.8.58 26.5.59	Farne Islands Poole Harbour (Dorset) 340m. S.
25	pull. x	10.7.59 7.11.59	Farne Islands Minster, Sheppey (Kent) 300m. SSE.
98	pull. x	3.7.56 6.2.59	Sheep Island: $55^{\circ}16'N. 3^{\circ}21'W.$ (Antrim) JAB R. Tamar (Devon) $c. 340m.$ SSE.
33	pull. x	4.6.59 (27.10.59)	off Aberdaron: $52^{\circ}48'N. 4^{\circ}41'W.$ (Caernarvon) BBO Plymouth (Devon) 165m. S.
37	pull. /?/	4.6.59 1.9.59	off Aberdaron BBO R. Exe (Devon) $c. 155m.$ SSE.

Five Cormorants from north Wales and one from Devon were reported abroad between September and January, four in western France and two in northern France. All had been ringed as pulli.

Shag (*Phalacrocorax aristotelis*) (71: 100 miles)

Birds ringed as pulli on Fair Isle, 59°32'N. 1°37'W. (Shetland), the Isle of May, 56°11'N. 2°23'W. (Fife), and the Farne Islands, 55°37'N. 1°37'W. (Northumberland), were recovered as follows:

Ringed		Recovered	
<i>Fair Isle</i>			
520756	30.6.58	24.3.59	near Maasholm: 54°41'N. 10°00'E. (Schleswig-Holstein) Germany
1008140	15.6.59	10.10.59	Rekefjord: 58°21'N. 6°16'E. (Rogaland) Norway
1008175	15.6.59	14.10.59	near Kyle of Lochalsh (Inverness) 210m. SW.
1008495	9.8.59	19.11.59	Helmsdale (Sutherland) 120m. SW.
<i>Isle of May</i>			
132209	17.7.58	(8.7.59)	Flotta (Orkney) 180m. N.
133464	14.7.58	28.1.59	near Skegness (Lincoln) 230m. SE.
<i>Farne Islands</i>			
1004012	7.7.58	13.1.59	Stow Bedon (Norfolk) 230m. SSE.
1004153	10.7.58	22.1.59	Brighton (Sussex) 335m. SSE.
1004987	4.7.59	17.12.59	Spalding (Lincoln) 200m. SSE.
1004927	22.7.59	16.12.59	Lowestoft (Suffolk) 255m. SSE.

Heron (*Ardea cinerea*) (39: 100 miles)

518934	pull. +	25.4.59 1.10.59	near Poyntzpass: 54°18'N. 6°22'W. (Armagh/Down) JAB Dunbar (East Lothian) 185m. NE.
515233	pull. +	18.5.58 17.1.59	Wiveton: 52°57'N. 1°02'E. (Norfolk) CBO Ballynabraggett (Down) 315m. WNW.
516614	pull. ×	1.6.58 5.4.59	Denver Sluice: 52°35'N. 0°22'E. (Norfolk) CBC Rijpwetering: 52°12'N. 4°38'E. (Zuid-Holland) Netherlands
520049	pull. ×	27.4.59 (16.7.59)	Denver Sluice CBC near Kirklington (York) 135m. NW.
1008747	pull. ×	4.5.59 (5.10.59)	Denver Sluice CBC Cockerham (Lancashire) 160m. NW.

Mallard (*Anas platyrhynchos*) (845)

937434	f.g.♂ +	4.9.57 7.9.58	Peakirk: 52°38'N. 0°17'W. (Northampton) Mstinsk: 58°30'N. 31°15'E. (Novgorod) U.S.S.R.
942341	f.g.♂ v +	26.9.57 21.8.58 (27.1.59)	Peakirk Giethoorn: 52°44'N. 6°02'E. (Overijssel) Netherlands near Brackley (Northampton) 52°02'N. 1°09'W.
AJ27009	juv.♀ +	6.8.59 21.11.59	Peakirk Juvigny: 48°33'N. 0°30'W. (Orne) France
938615	juv. ♂ +	12.6.57 (24.9.59)	Abberton: 51°50'N. 0°53'E. (Essex) Makkum: 53°03'N. 5°25'E. (Friesland) Netherlands
940023	juv. ♂ +	10.8.57 30.1.59	Abberton near Berck: 50°24'N. 1°28'E. (Pas-de-Calais) France
944222	1st W. ♀ +	25.2.59 13.11.59	Abberton near Dingwall (Ross) 450m. NNW.
944235	ad. ♂ +	20.5.59 25.8.59	Abberton L. Järnlunden: 58°13'N. 16°00'E. (Östergötland) Sweden

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44242	ad. ♂	26.5.59	Abberton
	+	end 10.59	Wismar: 53°54'N. 11°28'E. (Mecklenburg) Germany
44245	ad. ♂	28.5.59	Abberton
	+	end 7.59	near Assen: 53°00'N. 6°34'E. (Drenthe) Netherlands
J13021	pull.	30.7.58	Slimbridge: 51°44'N. 2°25'W. (Gloucester)
	+	c. 27.12.59	Gjøl: 57°04'N. 9°43'E. (Jutland) Denmark
T13008	pull.	30.7.58	Slimbridge
	+	23.8.59	Burgsvik: 57°03'N. 18°19'E. (Gotland) Sweden
J13713	ad. ♀	9.6.59	Slimbridge
	v	24.7.59	Wieringen: 52°54'N. 4°57'E. (Noord-Holland) Netherlands
J2052	juv.	28.7.58	Lundy: 51°12'N. 4°40'W. (Devon)
	+	27.7.59	near Neufchâtel: 50°37'N. 1°39'E. (Pas-de-Calais) France

In addition to the above, 160 Mallard ringed in the British Isles between August and March (one 19th April) were recovered abroad as summarised in Table B.

TABLE B—COUNTRIES AND MONTHS OF RECOVERIES OF MALLARD (*Anas platyrhynchos*)

Country of recovery	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
France (25) and Luxembourg (1)	—	—	—	4	2	1	2	4	5	5	2	1
Holland (32*)	—	—	—	1	6	5	3	7	6	2	—	—
Denmark (18)	—	—	—	1	3	3	4	4	3	—	—	—
Germany (23)	—	—	—	3	3	5	6	2	4	—	—	—
Sweden (6)	—	—	—	—	2	1	2	1	—	—	—	—
Norway (2) and Sweden (18)	1	—	—	—	9	2	6	1	1	—	—	—
Ireland (8)	—	1	—	1	4	2	—	—	—	—	—	—
U.S.S.R. (22†) and Baltic States (5)	—	5	—	1	10	8	1	—	—	—	—	—

*Total includes one bird reported "winter" and one "October/November".

†Total includes one bird reported "spring" and one undated.

See footnote to Table A.

The remaining 673 recoveries, which include 156 held over from the years 1953-1958, provide little evidence of migration, only 37 showing movements of more than 100 miles.

Teal (*Anas crecca*) (526)

54196	pull.	9.7.59	South Uist: 57°15'N. 7°25'W. Outer Hebrides	RWJS
	+	(22.9.59)	near Ammanford (Carmarthen) 400m. SSE.	
839—	f.g.	7.12.54	Peakirk: 52°38'N. 0°17'W. (Northampton)	
	+	0.11.59	near Manfredonia: 41°37'N. 15°55'E. (Puglia)	Italy
21199	ad.	21.10.54	Piaam: 53°02'N. 5°25'E. (Friesland)	Netherlands
Leiden	v	26.11.56	Abberton: 51°50'N. 0°53'E. (Essex)	
3318	+	17.1.59	Chichester Harbour: 50°49'N. 0°58'W. (Sussex)	
06999	ad. ♂	7.12.55	Abberton	
	+	4.11.59	Reus: 41°10'N. 1°06'E. (Tarragona)	Spain
09370	1st W. ♂	29.10.56	Abberton	
	/?/	2.11.57	near Knezhka: 43°30'N. 24°06'E. (Vratsa)	Bulgaria
24155	ad. ♂	12.3.57	Abberton	
	+	0.8.58	Novaya Kazanka: 48°57'N. 49°40'E. (Kazakhstan)	U.S.S.R.
24419	ad. ♂	26.10.57	Abberton	
	+	9.9.59	Città Sant'Angelo: 42°30'N. 14°04'E. (Pescara)	Italy

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3024833	ad. ♀ +	26.11.57 c. 5.1.59	Abberton Laguna de Antela: 42°07'N. 7°41'W. (Orense) Spain
3058047	ad. ♂ +	18.1.59 13.12.59	Abberton Pordim: 43°23'N. 24°51'E. (Pleven) Bulgaria
3058152	ad. ♂ +	6.6.59 26.10.59	Abberton <i>near</i> Ravenna: 44°25'N. 12°12'E. Italy
3058259	ad. ♀ +	11.8.59 1959	Abberton Valverde de Leganés: 38°42'N. 6°58'W. (Badajoz) Spain
3058673	ad. ♂ +	7.9.59 (26.11.59)	Abberton Santibañez: 40°10'N. 6°14'W. (Cáceres) Spain
905211	f.g. ♂ v +	7.11.49 20.3.52 26.8.59	Orielton: 51°40'N. 4°57'W. (Pembroke) Peakirk Sönder Nissum: 56°19'N. 8°12'E. (Jutland) Denmark

In addition to the above, 203 birds ringed in the British Isles outside the breeding season were recovered abroad, as summarised in Table C.

TABLE C—COUNTRIES AND MONTHS OF RECOVERIES OF TEAL (*Anas crecca*)

Country of recovery	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
France (57*)	—	—	—	1	4	5	3	6	9	16	9	3
Holland (22*) and Belgium (2)	1	—	—	—	1	5	2	1	1	2	2	—
Denmark (19)	—	—	—	—	7	7	4	1	—	—	—	—
Germany (12*) and Poland (3)	—	—	—	—	8	4	2	—	—	—	—	—
Norway (4) and Sweden (9)	1	2	2	—	5	1	—	2	—	—	—	—
Finland (19*)	1	6	—	—	7	3	1	—	—	—	—	—
U.S.S.R. (51*) and Baltic States(5)	3	15	1	—	18	14	4	—	—	—	—	—

*Total includes undated record(s) omitted from monthly columns.

See footnote to Table A.

Twenty-two movements of over 200 miles within Great Britain were recorded and 45 birds marked in Great Britain were recovered in Ireland.

Garganey (*Anas querquedula*) (3: 5 miles)

3024175	ad. ♂	13.4.57	Abberton: 51°50'N. 0°53'E. (Essex)
	+	17.3.59	St. Ciers: 45°18'N. 0°36'W. (Gironde) France
3058209	juv. ♂	27.7.59	Abberton
	+	22.8.59	Groede: 51°23'N. 3°30'E. (Zeeland) Netherlands

Gadwall (*Anas strepera*) (3: 5 miles)

3041474	ad. ♀	8.5.58	Abberton: 51°50'N. 0°53'E. (Essex)
()		21.10.59	near Kleinzen: 53°47'N. 11°28'E. (Mecklenburg) Germany

Wigeon (*Anas penelope*) (30: 100 miles)

918820	f.g. ♀	14.10.55	Deeping St. James: 52°40'N. 0°17'W. (Lincoln)
+		21.1.59	Pwllheli (Caernarvon) 190m. W.
918822	f.g. ♂	14.10.55	Deeping St. James
+		25.1.59	Skinburness (Cumberland) 200m. NW.

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3615	1st W. ♀	6.12.52	Abberton: 51°50'N. 0°53'E. (Essex)
	+	21.12.59	near Tewkesbury (Gloucester) 125m. W.
21535	ad. ♀	3.12.56	Abberton
	+	20.1.59	near Saltash (Cornwall) 235m. WSW.

Sixteen Wigeon ringed between November and 2nd April (twelve at Abberton, three at Deeping St. James, one at Slimbridge) were recovered abroad, as summarised in Table D.

TABLE D—COUNTRIES AND MONTHS OF RECOVERIES OF WIGEON (*Anas penelope*)

Country of recovery	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
Germany (2)	—	—	—	—	—	—	—	1	—	1
U.S.S.R. (14)	1	7	1	—	1	2	2	—	—	—

See footnote to Table A.

Pintail (*Anas acuta*) (8: 40 miles)

42345	f.g. ♀	22.2.59	Deeping St. James: 52°40'N. 0°17'W. (Lincoln)
	+	31.10.59	off Mandö Island: c. 55°17'N. 8°38'E. (Jutland) Denmark
42353	f.g. ♀	24.3.59	Deeping St. James
	/?/	10.5.59	Puchkanski: 64°03'N. 46°54'E. (Komi) U.S.S.R.
42356	f.g. ♂	24.3.59	Deeping St. James
	/?/	10.5.59	Puchkanski, U.S.S.R.
5523	ad. ♂	29.12.53	Slimbridge: 51°44'N. 2°25'W. (Gloucester)
	+	16.9.59	Lake Takern: c. 58°20'N. 14°50'E. (Ostergötland) Sweden
1804	f.g. ♀	29.9.56	Slimbridge
	+	14.10.58	Lake Chukhloma: 58°45'N. 42°41'E. (Kostroma) U.S.S.R.
07174	f.g. ♀	10.10.56	Slimbridge
	+	18.9.59	near Makkum: 53°04'N. 5°23'E. (Friesland) Netherlands

Shoveler (*Spatula clypeata*) (14: 40 miles)

07639	f.g. ♀	13.10.58	Peakirk: 52°38'N. 0°17'W. (Northampton)
	+	28.1.59	Bermillo: 41°22'N. 6°08'W. (Zamora) Spain
07725	f.g. ♂	29.12.58	Peakirk
	+	10.5.59	Narva: 59°23'N. 28°12'E. (Leningrad) U.S.S.R.
3045	ad. ♀	18.7.59	Abberton: 51°50'N. 0°53'E. (Essex)
	+	16.8.59	Lochwinnoch (Renfrew) 345m. NW.
9167	f.g. ♂	12.12.55	Slimbridge: 51°44'N. 2°25'W. (Gloucester)
	+	c. 17.1.59	near Allhallows (Kent) 127m. E.

Tufted Duck (*Aythya fuligula*) (21: 100 miles)

2875	ad. ♀	29.3.55	Abberton: 51°50'N. 0°53'E. (Essex)
	+	24.5.58	(Komi) U.S.S.R.
2968	1st W. ♀	17.12.56	Abberton
	+	0.5.58	Ust-Tsilma: 56°26'N. 52°11'E. (Komi) U.S.S.R.
3008	1st W. ♀	5.1.58	Abberton
	+	28.5.58	near Bol'shoy Kamen: 62°26'N. 65°19'E. (Tumen) U.S.S.R.

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Orielson 5698	ad. ♀	24.12.56	Orielton: 51°40'N. 4°57'W. (Pembroke)
	v	12.2.57	Orielton
	v	7.8.57	Orielton
	+	2.10.58	Udorsk: 63°28'N. 48°58'E. (Komi) U.S.S.R.
AJ6559	f.g.	3.2.58	Island Barn Reservoir: 51°23'N. 0°22'W. (Surrey) MW
	+	3.4.59	Houtskar: 60°12'N. 21°20'E. (Turku ja Pori) Finland
AH9703	f.g. ♀	1.2.58	Walton Reservoir: 51°17'N. 0°15'W. (Surrey) DP
	x	23.4.59	Kirkkojärvi: 61°30'N. 23°01'E. (Turku ja Pori) Finland

Birds marked as full-grown at Deeping St. James, 52°40'N. 0°17'W. (Lincoln), were recovered as follows:

—Ringed—		—Recovered—	
918982	8.1.57	summer 1958	Kiknur: 57°21'N. 47°13'E. (Kirov) U.S.S.R.
919049	17.2.57	15.1.59	Wavereen: 52°13'N. 4°54'E. (Utrecht) Netherlands
919093	22.9.57	20.9.58	Sukhinichi: 54°07'N. 35°23'E. (Kaluga) U.S.S.R.
3042217	9.3.58	21.9.59	Möja: 59°25'N. 18°55'E. (Stockholm) Sweden
3042264	8.12.58	17.1.59	near Milford Haven (Pembroke) 215m. WSW.
3042269	10.12.58	2.4.59	Balcombe (Sussex) 110m. S.
3042332	22.2.59	10.10.59	Burscough (Lancashire) 130m. WNW.
3242338	22.2.59	c. 1.10.59	near Söderköping: 58°28'N. 16°55'E. (Östergötland) Sweden

Scaup (*Aythya marila*) (2: 5 miles)

932978	1st W. ♀	14.1.57	Abberton: 51°50'N. 0°53'E. (Essex)
	()	2.2.59	Poel Island: c. 54°00' N. 11°30'E. (Mecklenburg) Germany

Pochard (*Aythya ferina*) (10: 5 miles)

Birds ringed as full-grown at Deeping St. James, 52°40'N. 0°17'W. (Lincoln), were recovered as follows:

—Ringed—		—Recovered—	
918929	26.12.56	21.9.58	near Kazgorodok: 52°54'N. 70°43'E., Kokchetav (Kazakhstan) U.S.S.R.
918978	3.1.57	21.6.59	Turov: 52°03'N. 27°43'E. (Gomel) U.S.S.R.
919026	5.2.57	5.5.59	near Leningrad: 59°57'N. 30°20'E. U.S.S.R.
919066	25.2.57	31.1.59	Connerré: 48°04'N. 0°30'E. (Sarthe) France
948523	9.12.58	5.10.59	near Schongau: 47°49'N. 10°54'E. (Bayern) Germany
948529	9.12.58	c. 20.1.59	Shercock (Cavan) 290m. WNW.
948530	1.1.59	(20.1.59)	near Clevedon (Somerset) 135m. SW.

Shelduck (*Tadorna tadorna*) (6: 5 miles)

939311	f.g. ♀	4.5.55	Slimbridge: 51°44'N. 2°25'W. (Gloucester)
	x A	20.8.59	Terrington (Norfolk) 135m. ENE.
AD2917	pull.	22.7.55	Poole Harbour: 50°42'N. 2°00'W. (Dorset) BS
	x	25.9.59	near Cuxhaven: 53°52'N. 8°42'E. (Niedersachsen) Germany
AJ4104	pull.	7.7.57	Poole Harbour BS
	+	25.2.59	near Le Havre: 49°30'N. 0°06'E. (Seine-Maritime) France

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Grey Lag Goose (*Anser anser*) (6: 100 miles)

3481	1stW.	22.11.53	(Dumfries)
	+	autumn 1959	Mýrdalur: c. 63°26'N. 19°10'W. Iceland
3433	1stW.	22.11.53	(Dumfries)
	+	c. 20.9.56	Klömbrur: 65°50'N. 17°20'W. Iceland

White-fronted Goose (*Anser albifrons*) (18: 10 miles)

coveries of birds ringed at Slimbridge, 51°44'N. 2°25'W. (Gloucester), have been reported as follows:

Ringed			Recovered	
0055	25.2.51	22.1.59	Hontenisse: 51°21'N. 4°02'E. (Zeeland)	Netherlands
T18	29.2.52	c. 3.3.59	Kritzkow: 53°53'N. 12°15'E. (Mecklenburg)	Germany
T67	21.2.58	14.1.59	near Elburg: 52°28'N. 5°51'E. (Gelderland)	Netherlands
T70	21.2.58	28.1.59	Varaville: 49°15'N. 0°10'W. (Calvados)	France
T71	21.2.58	3.11.59	Poel Island: c. 54°00'N. 11°25'E. (Mecklenburg)	Germany
T77	21.2.58	20.10.59	near Staraya Russa: 58°00'N. 31°20'E. (Novgorod)	U.S.S.R.
T98	21.2.58	0.9.59	Voznesenye: 64°38'N. 40°16'E. (Arkhangel)	U.S.S.R.
T117	21.2.58	13.6.59	Vaigach: c. 70°00'N. 59°00'E. (Arkhangel)	U.S.S.R.
T273	21.2.58	15.10.59	Cockerham (Lancashire)	155m. N.
T281	4.3.58	10.1.59	near Vlijmen: 51°43'N. 5°13'E. (Noord-Holland)	Netherlands
T294	4.3.58	spring 1959	Krasnyy Kholm: 58°05'N. 37°07'E. (Kalinin)	U.S.S.R.
T364	9.3.59	30.3.59	near Konskie: 51°12'N. 20°23'E. (Kielce)	Poland]
T370	9.3.59	17.4.59	near Lomza: 53°10'N. 22°00'E. (Bialystok)	Poland
T337	9.3.59	19.3.59	Assel: 53°41'N. 9°26'E. (Niedersachsen)	Germany
T361	9.3.59	14.11.59	near Prohn: 54°23'N. 13°03'E. (Mecklenburg)	Germany
T371	9.3.59	10.10.59	near Usedom: 53°53'N. 13°55'E. (Mecklenburg)	Germany
T398	9.3.59	c. 30.3.59	Petkum: 53°20'N. 7°15'E. (Niedersachsen)	Germany

Pink-footed Goose (*Anser arvensis brachyrhynchus*) (276)

328	ad.	27.10.50	(Dumfries)
	v	29.7.53	Central Iceland
	v	25.10.54	Annan (Dumfries)
	+	23.1.59	Crowland (Lincoln)

Five birds ringed in Britain were recovered between May and August in the region of Scoresby Sound, NE Greenland; and nine others between March and October in Iceland. Of 262 birds recovered on the wintering grounds in Britain, 100 had been ringed originally in central Iceland in 1953 and subsequently re-ringed in Britain.

Mute Swan (*Cygnus olor*) (55: 30 miles)

160	juv.	21.8.58	Sleaford: 52°59'N. 0°25'W. (Lincoln)	WMP
	x	8.2.59	Fulstow (Lincoln)	35m. NNE.
599	ad. ♂	16.7.59	Mistley: 51°57'N. 1°05'E. (Essex)	CBW
	x	31.10.59	Icklingham (Suffolk)	33m. NW.
1755	ad. ♂	19.8.58	Abberton: 51°50'N. 0°53'E. (Essex)	
	v	7.3.59	Dagenham (Essex)	33m. SW.
2097	ad. ♀	23.9.58	Abberton	
	x	23.2.59	Marston (Bedford)	60m. WNW.

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YB1634	1stW.	17.2.58	St. Albans: 51°46'N. 0°21'W. (Hertford) GAD
	v	13.9.58	Wanstead (Essex) 20m. SE.
	x	13.2.59	near Leatherhead (Surrey) 24m. SW. (of Wanstead)
YB1235	f.g.	28.12.57	Kew: 51°29'N. 0°18'W. (Surrey) NH
	x	9.9.59	near Ludham (Norfolk) 110m. NE.

Golden Eagle (*Aquila chrysaetos*) (2)

YB1967	pull.	4.6.58	(Inverness) W&M
	/?/	24.2.59	(Inverness) 35m. ESE.
YB1968	pull.	4.6.58	(Inverness) W&M
	/?/	(2.7.59)	(Inverness) 40m. E.

Precise localities of ringing and recovery are withheld in the interests of protection.

Buzzard (*Buteo buteo*) (2: 50 miles)

AJ3005	pull.	14.6.59	near Sedbergh: c. 54°23'N. 2°32'W. (York) SS
	+	30.10.59	Birkdale (Lancashire) 50m. SSW.

Montagu's Harrier (*Circus pygargus*) (2)

367358	pull.	10.7.54	near Hamsterley: 54°41'N. 1°49'W. (Durham) ND&N
	+	24.8.59	Aigre: 45°54'N. 0°01'E. (Charente) France
334176	pull.	3.7.50	Dartmoor (Devon) HGH
	+	13.6.58	Ploudaniel: 48°33'N. 4°19'W. (Finistère) France

Kestrel (*Falco tinnunculus*) (19: 50 miles)

3016925	pull.	21.6.57	Firth: 59°01'N. 3°09'W. (Orkney) EB
	v	6.9.58	Geleen: 50°58'N. 5°45'E. (Limburg) Netherlands
	x	23.9.59	near Geleen
3011954	pull.	26.6.57	near Cateleugh: 55°20'N. 2°25'W. (Northumberland) ND&N
	x A	19.6.59	near Mosear (Derby) 130m. SSE.
3065604	pull.	12.7.59	near Appleby: c. 54°35'N. 2°30'W. (Westmorland) RWR
	+	15.8.59	Cloughton (York) 80m. ESE.
3236564	pull.	28.6.59	near Sedbergh: 54°19'N. 2°32'W. (York) SS
	+	(4.11.59)	Viearstown (Leix) 200m. WSW.
3062452	pull.	3.7.59	near Hebden Bridge: 53°45'N. 2°00'W. (York) W&M
	x	(11.11.59)	Kingarth (Bute) 180m. NW.
3019306	pull.	17.7.59	Wembdon: 51°08'N. 3°02'W. (Somerset) EMP
	x	(28.11.59)	St. Planchers: 48°49'N. 1°34'W. (Manche) France
390505	f.g. ♀	1.12.57	Sway: 50°47'N. 1°37'W. (Hampshire) EC
	+	27.2.59	Marcilly-en-Gault: 47°28'N. 1°52'E. (Loir-et-Cher) France

Water Rail (*Rallus aquaticus*) (3)

251384	f.g.	11.1.59	Spurn Point: 53°35'N. 0°06'E. (York)
	x	2.5.59	Holzendorf: 53°41'N. 11°37'E. (Mecklenburg) Germany
299276	ad.	6.1.59	Abberton: 51°50'N. 0°53'E. (Essex)
	x	13.3.59	Texel: 53°10'N. 4°52'E. (Noord-Holland) Netherlands
273238	f.g. ♂	5.4.58	Dungeness: 50°55'N. 0°59'E. (Kent)
	+	26.11.59	near Clara (Ollaly) 400m. WNW.

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Moorhen (*Gallinula chloropus*) (18: 20 miles)

12914	ad.	22.12.57	near Scarisbrick: 53°37'N. 2°57'W. (Lancashire)	RPC
	+	3.1.59	near Macclesfield (Cheshire) 40m. SE.	
1783	juv.	30.8.57	near Colchester: 51°54'N. 0°55'E. (Essex)	MSJS
	×	(13.1.59)	near Woodbridge (Suffolk) 20m. NE.	
14456	ad.	20.7.55	Abberton: 51°50'N. 0°53'E. (Essex)	
	×	(19.1.59)	near Newmarket (Suffolk) 28m. NNW.	

Coot (*Fulica atra*) (18: 100 miles)

Recoveries of birds ringed at Abberton, 51°50'N. 0°53'E. (Essex), were reported as follows:

—Ringed—		—Recovered—		
29493	7.3.54	16.4.59	Wartena: 53°09'N. 5°54'E. (Friesland)	Netherlands
13762	15.2.55	20.2.59	Workum: 52°59'N. 5°26'E. (Friesland)	Netherlands
13740	5.2.55	14.1.59	near Bussum: 52°18'N. 5°07'E. (Noord-Holland)	Netherlands
18719	24.7.57	(4.2.59)	near Hereford 150m. W.	
4921*	16.8.58	17.1.59	near Fontaine-le-Dun: 49°53'N. 0°48'E. (Seine-Maritime)	France
4978	21.1.59	28.11.59	near Breukelen: 52°11'N. 5°04'E. (Utrecht)	Netherlands

ringed as pullus; the remainder were ringed when full-grown.

Oystercatcher (*Haematopus ostralegus*) (12: 100 miles)

1965	pull.	1.6.58	Aviemore: 57°12'N. 3°50'W. (Inverness)	HL
	×	19.4.59	La Rocque: 49°10'N. 2°02'W. Jersey	
056	pull.	24.5.53	Gladhouse: 55°43'N. 3°09'W. (Midlothian)	RWJS
	×	4.12.59	Whiteford Point (Glamorgan) 290m. S.	
011	ad.	14.5.54	Bardsey: 52°46'N. 4°48'W. (Caernarvon)	
	×	c. 22.7.58	near Lhanbryde (Moray) 340m. N.	

Lapwing (*Vanellus vanellus*) (63)

943	pull.	4.6.56	near Belford: 55°37'N. 1°49'W. (Northumberland)	MHBO
	×	25.4.59	Munkfors: 59°50'N. 13°35'E. (Värmland)	Sweden
402	pull.	20.5.56	Gargrave: 53°59'N. 2°06'W. (York)	JKF
	+	8.5.59	near Tobolsk: 58°35'N. 68°35'E. (Tumen)	U.S.S.R.

295943 is the first recovery in Sweden of a British-ringed Lapwing, the finder reporting that the species spread into the district about 1954. 293402 is by many hundreds of miles the most easterly recovery of a British-ringed Lapwing. Nineteen marked as pulli in Scotland and northern England were recovered as summarised in Table E.

TABLE E—COUNTRIES AND MONTHS OF RECOVERIES OF LAPWINGS (*Vanellus vanellus*)

Country of recovery	Dec.	Jan.	Feb.
and (6)	—	5	1
ncc (7) and Jersey (1)	—	7	1
in (3) and Portugal (2)	1	2	2

See footnote to Table A.

BRITISH BIRDS

Ringed Plover (*Charadrius hiaticula*) (9: 30 miles)

S78329	pull.	18.6.57	Criccieth: 52°56'N. 4°14'W. (Caernarvon)	LAP
	x	26.1.59	Conway (Caernarvon) 30m. NE.	
707248	juv.	23.9.59	Abberton: 51°50'N. 0°53'E. (Essex)	
	+	1.11.59	Figueira da Foz: 40°09'N. 8°51'W. (Beira Litoral)	Portugal

Golden Plover (*Charadrius apricarius*) (1)

S72722	pull.	29.6.58	Rhum: 57°00'N. 6°20'W. Inner Hebrides	JBN
	x	9.12.59	Tirce, Inner Hebrides: c. 40m. SSW.	

Turnstone (*Arenaria interpres*) (2: 5 miles)

700310	1stW.	4.9.58	Bardsey: 52°46'N. 4°48'W. (Caernarvon)	
	+	8.3.59	Mazagan: 33°19'N. 8°35'W.	Morocco

Snipe (*Capella gallinago*) (33: 100 miles)

V24113	ad.	30.7.57	St. Kilda: 57°49'N. 8°34'W. Outer Hebrides	SKBO
	+	19.2.59	near Clifden (Galway) 300m. SSW.	
704934	juv.	3.8.59	Gouthwaite: 54°05'N. 1°45'W. (York)	S&W
	+	2.10.59	near Upton (Cork) 330m. SW.	
V75407	ad.	1.12.57	near Wisbech: 52°44'N. 0°11'E. (Lincoln/Norfolk)	C&PM
	+	28.9.59	Maynooth (Kildare) 280m. W.	
S86696	f.g.	14.12.56	near Romford: 51°35'N. 0°11'E. (Essex)	RRS
	+	1.12.59	near St. Jean-de-Daye: 49°13'N. 1°08'W. (Manche)	France
X39959	f.g.	14.12.57	near Romford	RRS
	+	27.4.59	Torzhok: 57°03'N. 34°58'E. (Kalinin)	U.S.S.R.
S84448	f.g.	7.12.57	Epsom: 51°20'N. 0°16'W. (Surrey)	DP
	/2/	17.5.59	Pochinok: 54°25'N. 32°28'E. (Smolensk)	U.S.S.R.
V47878	f.g.	7.12.57	Epsom	CE&Q
	+	(9.2.59)	St. Annes: 49°43'N. 2°12'W. Alderney	
I 62518	f.g.	18.1.58	Epsom	CE&Q
	+	(26.10.59)	near Haslev: 55°20'N. 11°59'E. (Sjaelland)	Denmark

V24113 was identified as belonging to the race *C. g. faroensis*. Birds ringed at Abberton, 51°50'N. 0°53'E (Essex), as full-grown were recovered as follows:

—Ringed—			—Recovered—	
V58298	8.4.58	7.11.59	near Mértola: 37°42'N. 7°46'W. (Baixo Alentejo)	Portugal
V58511	17.8.58	18.8.59	near Askrigg (York) 210m. NW.	
V58538	5.9.58	1.10.59	near Stade: 53°36'N. 9°28'E. (Niedersachsen)	Germany
V58603	23.10.58	22.2.59	Foucauld: 33°11'N. 7°55'W.	Morocco
V58633	14.12.58 (11.3.59)		Gaillan: 45°20'N. 0°57'W. (Gironde)	France
V58386	20.2.59	9.9.59	Aardenburg: 51°17'N. 3°26'E. (Zeeland)	Netherlands
P11209	11.3.59	16.8.59	River Volkhov: c. 59°00'N. 31°30'E. (Novgorod)	U.S.S.R.

There are no previous recoveries of British-ringed Snipe in Africa and only one in the U.S.S.R.

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Woodcock (*Scolopax rusticola*) (4: 10 miles)

0859	pull.	27.4.54	Dawyck: 55°36'N. 3°19'W. (Peebles) IVBP
	+	25.1.59	near Dunhill (Waterford) 280m. SW.
1466	f.g.	11.10.59	Holme: 52°58'N. 0°33'E. (Norfolk) AEV
	+	13.12.59	Huelgoat: 48°22'N. 3°45'W. (Finistère) France
09605	f.g.	2.2.59	Windsor: 51°29'N. 0°38'W. (Berkshire) IMW
	+	2.5.59	Oredezsh: 58°48'N. 30°20'E. (Leningrad) U.S.S.R.

2009605 is the first recovery of a British-ringed Woodcock in the U.S.S.R.

Curlew (*Numenius arquata*) (11: 80 miles)

35626	ad.	29.7.59	Rosemarkie: 57°36'N. 4°07'W. (Ross) JL
	+	(24.8.59)	Spiddal (Galway) 360m. SW.
13853	pull.	22.6.58	Thornton-in-Craven: 53°56'N. 2°09'W. (York) W&M
	+	(25.6.59)	Nenagh (Tipperary) 265m. WSW.
6858	pull.	5.6.54	near Appleby: 54°36'N. 2°29'W. (Westmorland) JKF
	+	28.11.59	Limerick 280m. WSW.
5012	pull.	7.6.56	near Appleby RWR
	+	19.1.59	Clwyd Estuary (Flint) 100m. SSW.
75071	f.g.	11.8.59	Bardsey: 52°46'N. 4°48'W. (Caernarvon)
	+	0.11.59	Les Picux: 49°31'N. 1°48'W. (Manche) France

Green Sandpiper (*Tringa ochropus*) (2: 5 miles)

6095	f.g.	1.9.58	Bamburgh: 55°36'N. 1°42'W. (Northumberland) MHBO
	+	0.2.59	Marinha Grande: 39°45'N. 8°55'W. (Estremadura) Portugal

This is the first recovery of a British-ringed Green Sandpiper in Portugal.

Common Sandpiper (*Tringa hypoleucos*) (4: 5 miles)

75162	f.g.	31.7.57	Bardsey: 52°46'N. 4°48'W. (Caernarvon)
	+	14.7.59	near Nantes: 47°14'N. 1°35'W. (Loire-Atlantique) France
1415	juv.	13.8.55	Abberton: 51°50'N. 0°53'E. (Essex)
	× summer 1958		Tjelmens: 59°37'N. 6°24'E. (Rogaland) Norway
14442	juv.	30.8.57	Abberton
	()	14.5.59	Mesterricux: 44°38'N. 0°00' (Gironde) France

Redshank (*Tringa totanus*) (11: 20 miles)

28326	ad. ♀	10.6.53	Abberton: 51°50'N. 0°53'E. (Essex)
	+	28.1.59	River Medway (Kent) c. 30m. S.

Little Stint (*Calidris minuta*) (1)

5315	f.g.	31.12.58	New Ferry: 53°22'N. 2°59'W. (Cheshire) NH
	×	9.4.59	Nieuw-Bects: 53°04'N. 6°00'E. (Friesland) Netherlands

Dunlin (*Calidris alpina*) (9: 5 miles)

28734	ad.	29.9.57	near Dunbar: 56°00'N. 2°31'W. (East Lothian) H&M
	+	26.1.59	Meikle Ferry (Ross) 140m. NW.

BRITISH BIRDS

V25159	ad. +	26.8.57 29.4.59	near Seahouses: 55°34'N. 1°38'W. (Northumberland) MHBO Claouey: 44°46'N. 1°10'W. (Gironde) France
V25161	ad. [?]	28.8.57 (31.12.59)	near Seahouses MHBO Berck: 50°24'N. 1°35'E. (Pas-de-Calais) France
621554	f.g. +	5.9.59 c. 16.11.59	Boulmer: 55°26'N. 1°35'W. (Northumberland) MHBO Wexford 29om. SW.
V16951	ad. +	12.7.58 2.5.59	Spurn Point: 53°35'N. 0°06'E. (York) Franceville: 49°17'N. 0°12'W. (Calvados) France
R43682	ad. +	13.9.59 20.9.59	Holbeach: 52°54'N. 0°05'E. (Lincoln) AEV near Royan: 45°38'N. 1°02'W. (Charente-Maritime) France

Sanderling (*Crocethia alba*) (2)

S78933	f.g. v	3.9.59 1.11.59	Norwick: 60°45'N. 0°55'W. Unst (Shetland) CJRT Thornham Harbour (Norfolk) 54om. S.
S78934	f.g. x	3.9.59 24.9.59	Norwick CJRT Ver-sur-Mer: 49°20'N. 0°30'W. (Calvados) France

Ruff (*Philomachus pugnax*) (2)

V76652	juv. ♂ +	11.9.58 (15.11.59)	Fair Isle: 59°32'N. 1°37'W. (Shetland) Marismas del Guadalquivir: 37°07'N. 6°10'W. (Sevilla) Spain
S84079	ad. ♂ +	21.2.57 24.5.59	Cambridge Sewage Farm: 52°12'N. 0°07'E. C&PM Yakutsk: 62°05'N. 129°41'E. U.S.S.R.

V76652 is the first British-ringed Ruff to be recovered in Spain. S84079 was shot from a flock; Yakutsk is, by many hundreds of miles, the most easterly point from which any bird of any species ringed in the British Isles has been reported. It is of interest to add, however, that a Ruff ringed as a juvenile on 15th September 1951 at Amager, Denmark, was recovered on 18th May 1958 even further east, at Okhotsk (59°20'N. 143°10'E.).

Stone Curlew (*Burhinus oedichenus*) (1)

361629	pull. +	15.6.59 31.10.59	Frieth: 51°37'N. 0°55'W. (Buckingham) RL near Vergara: 43°02'N. 2°14'W. (Guipúzcoa) Spain
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Great Skua (*Catharacta skua*) (8: 10 miles)

Birds ringed as pulli on Foula, 60°08'N. 2°05'W. (Shetland), were recovered as follows:

—Ringed—		—Recovered—	
410567	7.8.58	20.8.59	Noirmoutier: 47°01'N. 2°15'W. (Vendée) France
AJ11363	20.7.59	15.10.59	Paris-Plage: 50°31'N. 1°36'E. (Pas-de-Calais) France
AJ11391	22.7.59	31.12.59	near Olhão: 37°01'N. 7°50'W. (Algarve) Portugal
412567	31.7.59	(28.12.59)	at sea off Ireland: 52°45'N. 12°00'W.
412594	1.8.59	26.10.59	Lowick (Northumberland) 31om. S.
412507	5.8.59	(12.10.59)	Gravelines: 50°59'N. 2°08'E. (Nord) France
410325	26.8.59	4.12.59	near Ranum: 56°54'N. 9°15'E. (Jutland) Denmark

Great Black-backed Gull (*Larus marinus*) (34: 100 miles)

412662	pull. ()	9.7.59 (14.12.59)	Fair Isle: 59°32'N. 1°37'W. (Shetland) at sea off Loch Inchard (Sutherland) c. 145m. WSW.
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3071	pull. v	4.7.58 27.2.59	North Rona: 59°08'N. 5°50'W. Outer Hebrides off Shetland c. 220m. ENE.	TBB
3124	pull. v	21.7.58 (3.3.59)	North Rona off Wick (Caithness) 115m. ESE.	TBB
2920	pull. x	5.7.59 (17.10.59)	Handa: 58°23'N. 5°11'W. (Sutherland) Dundee (Angus) 155m. SE.	MPH
3959	pull. ()	10.7.59 26.11.59	Handa Rockabill Lighthouse (Dublin) 325m. S.	MPH
0978	pull. +	21.6.59 7.9.59	Flannan Isles: 58°16'N. 7°35'W. Outer Hebrides Fladen Grounds: c. 58°25'N. 0°17'E. North Sea	WJE
8262	pull. +	5.7.56 15.4.59	St. Kilda: 57°49'N. 8°34'W. Outer Hebrides near Findhorn (Moray) 180m. E.	DRW
2781	juv. v	28.7.59 (20.9.59)	Rosemarkie: 57°36'N. 4°07'W. (Ross) off Blyth (Northumberland) c. 200m. SE.	JL
8444	pull. x	4.7.50 2.1.59	near Bodorgan: 53°11'N. 4°25'W. (Anglesey) Waterford 130m. WSW.	RFT

Lesser Black-backed Gull (*Larus fuscus*) (87)

21691	pull. x	13.7.59 (28.12.59)	near Lancaster: 54°03'N. 2°35'W. (Lancashire) Bamako: 12°35'N. 7°53'W., River Niger, Mali	W&M
2082	ad. [?]	20.3.55 23.10.59	Steep Holme: 51°21'N. 3°07'W. (Somerset) Betanzos: 43°17'N. 8°13'W. (Coruna) Spain	D&RC

The recovery locality of AJ21691 is about 450 miles inland and unique in this respect. The remaining 53 foreign recoveries of birds ringed as pulli conform closely to the known winter distribution of the species and are summarised in Table F.

TABLE F—REGIONS AND MONTHS OF RECOVERIES OF LESSER BLACK-BACKED GULLS (*Larus fuscus*)

Region of recovery	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Spain	1	2	—	(1)	—	—	—	—	—	(2)	—	(1)
Spain and Portugal	6	4	12	5	5	2	1	—	1	—	—	1
Mediterranean	—	—	—	1	1	—	—	—	—	—	—	—
Africa	—	—	2	1	2	1	—	—	1	—	—	—

See footnote to Table A.

Herring Gull (*Larus argentatus*) (114: 200 miles)

10112	pull. x	28.7.58 23.3.59	Nigg: 57°42'N. 4°00'W. (Ross) Newcastle-on-Tyne (Northumberland) 210m. SSE.	JL
10038	pull. x	13.8.58 20.8.59	near Rosemarkie: 57°36'N. 4°07'W. (Ross) Jarrow (Durham) 200m. SSE.	JL
10341	pull. x	13.7.59 (26.10.59)	near Rosemarkie Gransha (Down) 220m. SSW.	JL
140	pull. x	6.8.54 0.2.59	Bass Rock: 56°04'N. 2°38'W. (East Lothian) Staines Reservoir (Middlesex) 330m. SSE.	MHBO
11575	pull. x	23.6.59 16.11.59	Bass Rock Walsall (Stafford) 240m. S.	MHBO
2539	pull. +	10.7.58 1.2.59	Port Erin: 54°05'N. 4°46'W. Isle of Man Ilkeston (Derby) 155m. SE.	DJS

Common Gull (*Larus canus*) (8: 50 miles)

3035684	ad.	26.1.59	Avoch: 57°34'N. 4°10'W. (Ross) JL
	+	24.5.59	Naustdal: 61°55'N. 5°52'E. (Sogn og Fjordane) Norway
374568	1stW.	21.2.56	Skokholm: 51°42'N. 5°16'W. (Pembroke)
	x	27.5.59	near Stokmarknes: 68°34'N. 15°00'E. (Nordland) Norway

Black-headed Gull (*Larus ridibundus*) (255)

390779	1stW.	23.1.58	near Runcorn: 53°19'N. 2°44'N. (Cheshire) RPC
	+	10.6.59	Ödemotland: 58°39'N. 5°37'W. (Rogaland) Norway
3022737	juv.	7.8.57	Abberton: 51°50'N. 0°53'E. (Essex)
	x	21.9.58	near Eisenach: 50°59'N. 10°19'E. (Thüringen) Germany
3051134	ad.	16.1.59	London, Victoria Embankment ACP
	x	20.7.59	near Kiel: 54°20'N. 10°08'E. (Schleswig-Holstein) Germany
368433	ad.	2.2.56	Sandwich: 51°17'N. 1°20'E. (Kent) DFH
	()	10.3.59	Leek: 53°10'N. 6°24'E. (Groningen) Netherlands
3010556	ad.	21.1.58	Chartham Down: 51°16'N. 1°02'E. (Kent) SBRS
	x	16.5.59	near Gundsömagle: 55°43'N. 12°11'E. (Sjaelland) Denmark

Birds ringed as pulli in colonies in southern England were recovered abroad between October and April as follows: Germany, one; Belgium, one; France three; S Spain, one; and Portugal, one. One bird from a Lanarkshire colony was recovered in N. Spain. Within the British Isles 36 recoveries showed movement between 100 and 410 miles, mainly in a westerly direction.

Kittiwake (*Rissa tridactyla*) (41: 100 miles)

Birds ringed on the Farne Islands, 55°37'N. 1°37'W. (Northumberland), were recovered as follows:

—Ringed—		—Recovered—	
3012098	29.6.57	1.7.59	Whitebay: 47°02'N. 53°46'W. Newfoundland
3023403	29.6.57	15.4.59	Teignmouth (Devon) 355m. SSW.
3023411	29.6.57	22.8.59	Frederikshåb: c. 62°00'N. 50°00'W. Greenland
3023567	21.7.57	28.10.59	off Random Isle: c. 48°05'N. 53°25'W. Newfoundland
3052177	10.7.58	22.5.59	Eastchurch, Sheppey (Kent) 300m. SSE.
3052425	10.7.58	17.6.59	off Frederikshåb, Greenland
3052609	10.7.58	5.7.59	20 miles E. of Fair Isle (Shetland) c. 270m. N.
3052741	10.7.58	5.1.59	Motta Visconti: 45°18'N. 8°59'E. (Lombardy) Italy
3052664*	11.7.58	(21.7.59)	North Sea, c. 56°00'N. 1°00'E. c. 100m. ENE.
3022078	18.7.58	26.5.59	Lynn Well Lightship, the Wash c. 195m. SSE.
2021316	27.6.59	c. 0.8.59	near Julianehåb: c. 61°00'N. 46°00'W. Greenland
2021784	9.7.59	31.12.59	off Cabo Silleiro: 42°07'N. 8°54'W. (Pontevedra) Spain

*Ringed as adult; the remaining birds were ringed as pulli.

3052741 is the first recovery of a British-ringed Kittiwake in Italy. There is one previous such recovery from Sicily.

3054017	pull.	4.7.58	Dunbar: 56°00'N. 2°31'W. (East Lothian) JCC
	x	19.11.59	Dorking (Surrey) 340m. SSE.
2021948	pull.	6.7.59	Dunbar JCC
	x	c. 9.9.59	Corton (Suffolk) 290m. SE.

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19903	ad. v	30.3.57 19.8.59	St. Abbs Head: 55°54'N. 2°08'W. (Berwick) IJP off Orkney: 59°06'N. 2°00'W. c. 220m. N.
68840	pull. x	4.7.59 22.8.59	near Ballycastle: 55°12'N. 6°15'W. (Antrim) JAB near Fort William (Inverness) 120m. NNE.
T36729	pull. x	26.6.56 20.1.59	North Shields: 55°01'N. 1°26'W. (Northumberland) ND&N 120m. SE. of Halifax: 44°38'N. 63°35'W. Nova Scotia
52080	pull. x A	1.7.58 25.5.59	North Shields ND&N Scolt Head (Norfolk) 160m. SE.
21633	pull. x	c. 20.6.59 25.12.59	North Shields ND&N near Orthez: 43°33'N. 0°40'W. (Basses-Pyrénées) France
47048	pull. x	5.7.58 9.5.59	Great Orme: 53°21'N. 3°52'W. (Caernarvon) RAFK Stevenston (Ayr) 160m. NNW.

Common Tern (*Sterna hirundo*) (19: 20 miles)

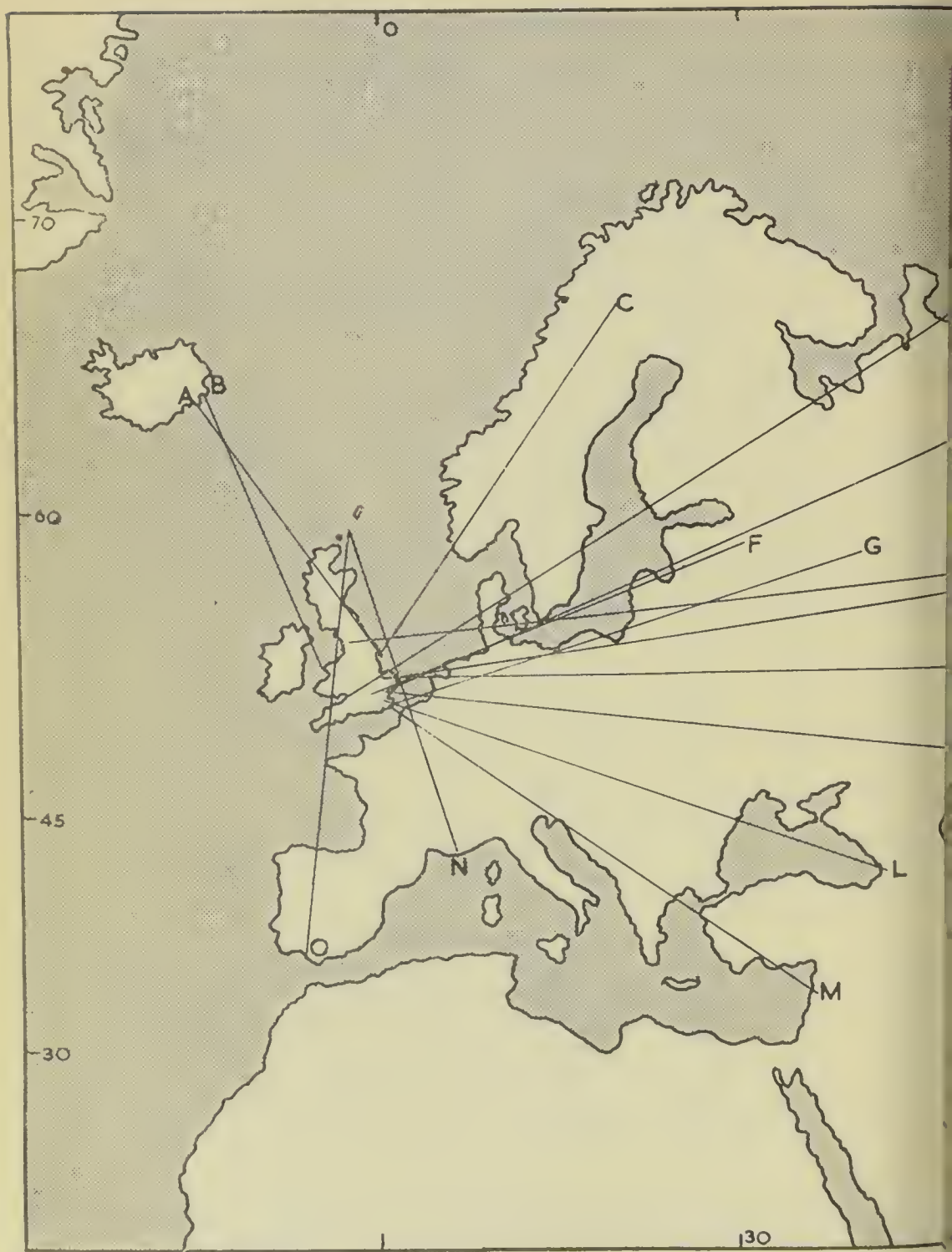
7067	pull. +	5.7.59 7.9.59	Whiteness Head: 57°35'N. 3°59'W. (Nairn) JL Esposende: 41°32'N. 8°47'W. (Minho) Portugal
27886	pull. ()	11.7.55 c. 18.9.58	near Embleton: 55°31'N. 1°36'W. (Northumberland) MHBO "Coast of Portugal c. 40°00'N."
2571	pull. ()	27.6.58 c. 15.5.59	Scolt Head: 52°59'N. 0°45'E. (Norfolk) EAGD Sassandra: 4°58'N. 6°08'W. Ivory Coast
2718	pull. ()	30.6.58 c. 19.1.59	Scolt Head EAGD near Freetown: 8°30'N. 13°17'W. Sierra Leone
5162	pull. ()	6.7.58 end 2.59	Scolt Head EAGD Port Etienne: 20°54'N. 17°01'W. Mauritania
2207	pull. v	29.6.58 23.6.59	Stiffkey: 52°57'N. 0°56'E. (Norfolk) CBO Dakar: 14°38'N. 17°27'W. Senegal
9512	pull. ()	6.7.58 c. 19.1.59	Rye Harbour: 50°56'N. 0°46'E. (Sussex) DBO near Freetown: 8°30'N. 13°17'W. Sierra Leone
2792	pull. x	19.7.59 22.9.59	Rye Harbour DBO Casablanca: 33°39'N. 7°35'W. Morocco

Arctic Tern (*Sterna macrura*) (7: 50 miles)

5049	pull. v	23.7.55 9.7.59	Aberlady Bay: 56°01'N. 2°51'W. (East Lothian) RWJS Farne Islands (Northumberland) 53m. SE.
2427	pull. x	7.7.58 26.6.59	Farne Islands: 55°37'N. 1°37'W. (Northumberland) Avonmouth (Gloucester) 280m. S.
3355	pull. x	18.7.58 7.1.59	Farne Islands near East London: 33°10'S. 27°42'E. (Cape Province) South Africa

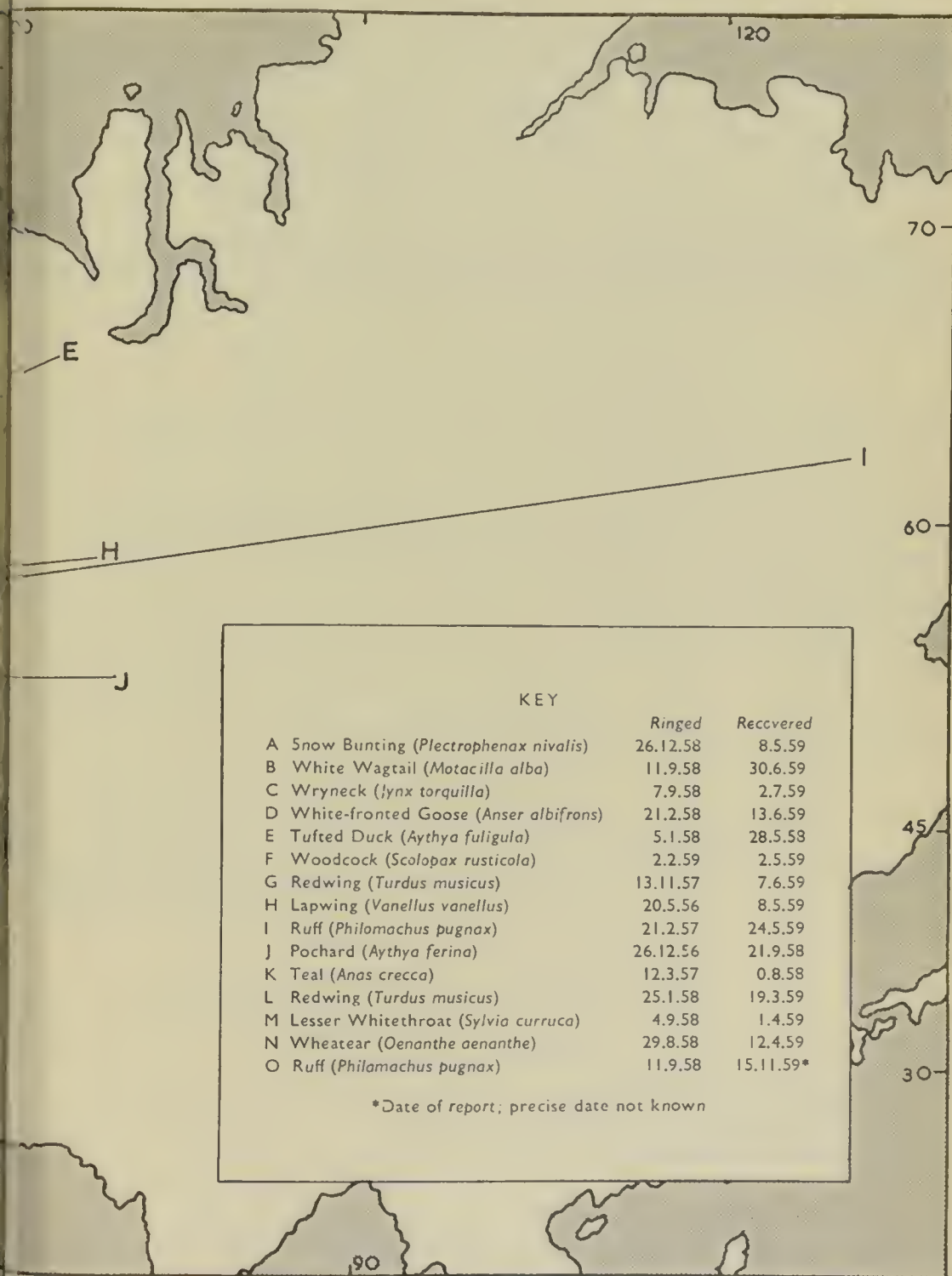
Little Tern (*Sterna albifrons*) (4: 5 miles)

5284	pull. x	7.7.53 21.6.59	Buddon Ness: 56°28'N. 2°44'W. (Angus) JG Foulney (Lancashire) 160m. S.
4029	pull. +	28.6.57 16.8.59	Ravenglass: 54°21'N. 3°25'W. (Cumberland) ROMF near Oporto: 41°09'N. 8°37'W. (Douro Litoral) Portugal
7055	pull. x	13.7.57 21.6.59	Benacre: 52°21'N. 1°43'E. (Suffolk) H&W Foulney (Lancashire) 235m. WNW.



Map 1—Some notable re

REPORT ON BIRD-RINGING FOR 1959



eries in Europe and Asia

Sandwich Tern (*Sterna sandvicensis*) (52)

P12783	pull. ()	4.7.59	Farne Islands: 55°37'N. 1°37'W. (Northumberland)
		end 10.59	Baie d'Audierne: c. 47°50'N. 4°40'W. (Finistère) France
299662	pull. ×	27.6.57	nr. Killyleagh: 54°24'N. 5°39'W. (Down) PPM
		(17.3.59)	Walvis Bay: 22°59'S. 14°31'E. South-West Africa
P13329	pull. ×	21.6.59	Stiffkey: 52°57'N. 0°56'E. (Norfolk) CBO
		(27.9.59)	Praia da Rocha: 37°07'N. 8°32'W. (Algarve) Portugal

Fifteen British-ringed Sandwich Terns were recovered on the coasts of north and west Africa between Morocco and Ghana, the dates being spread fairly evenly throughout the year from September to July.

Razorbill (*Alca torda*) (22: 100 miles)

Birds ringed as pulli on Fair Isle, 59°32'N. 1°37'W. (Shetland), were recovered as follows:

—Ringed—		—Recovered—	
AT64113	1.7.59	6.10.59	near Haugesund: c. 59°20'N. 5°23'E. (Rogaland) Norway
AT64119	1.7.59	25.9.59	Færder Fyr: c. 59°02'N. 10°32'E. Oslofjord, Norway
AT64314	8.7.59	(5.10.59)	off Haugesund, Norway
AT64408	11.7.59	23.11.59	near Baracaldo: 43°20'N. 3°03'W. (Vizcaya) Spain
AT59305	pull. +	7.7.59	Handa: 58°23'N. 5°11'W. (Sutherland) MPH
		18.9.59	near Kinn: 61°35'N. 4°50'E. (Sogn og Fjordane) Norway
AT59306	pull. +	7.7.59	Handa MPH
		21.11.59	Oksö Fyr: c. 58°02'N. 8°04'E. Kristiansand (Vest-Agder) Norway
AT59533	pull. +	21.6.59	Flannan Isles: 58°16'N. 7°35'W. Outer Hebrides WJE
		6.10.59	off Stavenaes: c. 61°25'N. 5°03'E. (Sign og Fjordane) Norway
AT59249	pull. ()	26.6.59	Flannan Isles WJE
		7.10.59	Holmen-Gra Fyr: 60°50'N. 4°40'E. (Hordaland) Norway
AT62269	pull. +	4.7.59	near Ballycastle: 55°15'N. 6°19'W. (Antrim) JAB
		(30.10.59)	Talybont (Merioneth) 180m. SSE.
3076004	pull. +	11.6.59	Calf of Man: 54°03'N. 4°49'W. CMRS
		22.10.59	Bilbao Bay: c. 43°20'N. 3°05'W. (Vizcaya) Spain
AT14952	ad. ×	8.6.57	Lundy: 51°12'N. 4°40'W. (Devon)
		(11.2.59)	Portland (Dorset) 105m. ESE.

Birds ringed as pulli on Skokholm, 51°42'N. 5°16'W., and Skomer, 51°44'N. 5°19'W. (Pembrokeshire), were recovered as follows:

—Ringed—		—Recovered—	
AT57341	2.7.58	16.3.59	Pasajes: 43°19'N. 1°56'W. (Guipúzcoa) Spain
3055117	10.7.58	(2.1.59)	Ile d'Oleron: 45°55'N. 1°16'W. (Charente-Maritime) France
3055586	15.7.58	25.10.59	Wissant: 50°52'N. 1°40'E. (Pas-de-Calais) France
3064762	17.6.59	(2.11.59)	Le Boucau: 43°32'N. 1°29'W. (Basses-Pyrénées) France
3064802	19.6.59	28.11.59	off Guecho: 43°21'N. 3°01'W. (Vizcaya) Spain
3064931	28.6.59	3.11.59	St. Jean-de-Luz: 43°23'N. 1°39'W. (Basses-Pyrénées) France
3064970	29.6.59	3.11.59	St. Jean-de-Luz, France

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Guillemot (*Uria aalge*) (23: 120 miles)

1T64261	pull. +	8.7.59 21.11.59	Fair Isle: 59°32'N. 1°37'W. (Shetland) Inner Boknfjord: c. 59°10'N. 5°35'E. (Rogaland) Norway
1T64269	pull. ×	8.7.59 3.10.59	Fair Isle Søgne: 58°05'N. 7°49'E. (Vest-Agder) Norway
1T64286	pull. +	8.7.59 9.10.59	Fair Isle off Risør: 58°44'N. 9°15'E. (Aust-Agder) Norway
234	ad. +	c. 4.6.58 4.11.59	North Rona: 59°08'N. 5°50'W. Outer Hebrides DAR Söngvår Fyr: c. 58°00'N. 7°54'E. (Vest-Agder) Norway
1T26620	pull. +	26.6.57 18.10.59	Isle of May: 56°11'N. 2°33'W. (Fife) Oslofjord: c. 59°00'N. 10°40'E. Norway
1T26581	pull. ×	26.6.57 24.1.59	Isle of May Texel: 53°05'N. 4°50'E. Netherlands
1T62275	pull. +	4.7.59 16.12.59	near Ballycastle: 55°15'N. 6°19'W. (Antrim) JAB off Santander: 43°28'N. 3°48'W. Spain
955181	pull. v	11.7.58 23.5.59	Skokholm: 51°42'N. 5°16'W. (Pembroke) Trouville: 49°22'N. 0°08'E. (Calvados) France
1T43342	pull. +	14.6.57 (17.1.59)	Lundy: 51°12'N. 4°40'W. (Devon) Le Tréport: 50°04'N. 1°22'E. (Seine-Maritime) France

Birds ringed on the Farne Islands, 55°37'N. 1°37'W. (Northumberland), were recovered as follows:

—Ringed—		—Recovered—	
1J15791*	11.7.59	14.10.59	Oslofjord, Norway
1J1505	22.7.59	13.10.59	near Tvedestrand: 58°36'N. 8°55'E. (Aust-Agder) Norway
1J1513	22.7.59	(9.11.59)	Oslofjord, Norway
1J1542	22.7.59	12.9.59	Minsmere (Suffolk) 260m. SE.
1J5907	5.8.59	29.11.59	off Fredrikstad: c. 59°03'N. 11°00'E. Oslofjord, Norway
1J1527	22.7.59	26.12.59	Westerland: 54°54'N. 8°19'E. Sylt, Germany

Ringed as adult; the remainder were ringed as pulli.

Puffin (*Fratercula arctica*) (5: 10 miles)

1T55103	pull. v	10.7.58 c. 14.1.59	Fair Isle: 59°32'N. 1°37'W. (Shetland) Plaistow (Essex) 560m. S.
1J53610	f.g. ×	27.5.58 16.1.59	off Aberdaron: 52°48'N. 4°41'W. (Caernarvon) BBO near Almunecar: 36°44'N. 3°41'W. (Granada) Spain
1J5825	ad. ×	15.7.58 30.12.59	Skokholm: 51°42'N. 5°16'W. (Pembroke) Cap Ferret: 44°42'N. 1°16'W. (Gironde) France

Woodpigeon (*Columba palumbus*) (38: 50 miles)

102121	pull. +	15.8.58 (9.11.59)	Six Mile Bottom: 52°12'N. 0°22'E. (Cambridge) MAFF near Godalming (Surrey) 75m. SSW.
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Turtle Dove (*Streptopelia turtur*) (6: 5 miles)

100952	pull. [?]	29.7.56 28.4.59	Downley: 51°39'N. 0°47'W. (Buckingham) JGa Belalcázar: 38°35'N. 5°10'W. (Córdoba) Spain
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291164	ad.	17.5.57	Billericay: 51°38'N. 0°25'E. (Essex) D&SC
	+	17.5.59	St. Savin de Blaye: 45°09'N. 0°26'W. (Gironde) France
2033875	pull.	28.6.59	Foulness: 51°36'N. 0°55'E. (Essex) GD
	[?]	28.8.59	Sorde-l'Abbaye: 43°32'N. 1°03'W. (Landes) France

Cuckoo (*Cuculus canorus*) (3: 5 miles)

286645	juv.	13.9.59	Beddington: 51°23'N. 0°08'W. (Surrey) LNHS
	+	20.10.59	near Les Sables d'Olonne: 46°31'N. 1°44'W. (Vendée) France

Barn Owl (*Tyto alba*) (14: 50 miles)

AF4291	pull.	6.6.57	Moniaive: 55°11'N. 3°55'W. (Dumfries) TT
	x	18.1.59	Swayfield, Grantham (Lincoln) 210m. SE.

Kingfisher (*Alcedo atthis*) (2: 5 miles)

E25448	pull.	16.6.57	Guildford: 51°14'N. 0°34'W. (Surrey) PELS
	x	13.1.59	Biddenden (Kent) 52m. E.

Wryneck (*Jynx torquilla*) (1)

V16973	f.g.	7.9.58	Spurn Point: 53°35'N. 0°06'E. (York)
	x	2.7.59	Tjåmotis: 66°56'N. 18°30'E. (Norrbotten) Sweden

This is only the second foreign recovery of a British-ringed Wryneck. The first record also involved a bird ringed at Spurn and recovered in Sweden.

Skylark (*Alauda arvensis*) (3: 5 miles)

B32443	pull.	12.6.53	South Shields: 55°00'N. 1°25'W. (Durham) FGG
	x	0.12.59	Haverton Hill (Durham) 26m. S.

Swallow (*Hirundo rustica*) (44: 50 miles)

J22189	pull.	27.6.59	Whitfield: 54°54'N. 2°24'W. (Northumberland) C&L
	x	28.11.59	Colesberg: 30°45'S. 25°05'E. (Cape Province) South Africa
F11708	pull.	16.8.58	Lambley: 52°58'N. 1°07'W. (Nottingham) PHS
	v breeding	18.8.59	near Larne (Antrim) 225m. WNW.
67209	juv.	12.9.59	Burton Pedwardine: 52°58'N. 0°24'W. (Lincoln) WMP
	x	7.10.59	near Valencia: 39°29'N. 0°24'W. Spain
K74461	juv.	25.9.58	Bedworth: 52°29'N. 1°28'W. (Warwick) HL
	v breeding c.	14.5.59	Newby (York) 138m. N.
K44099	ad.	16.7.58	Shorcham: 50°50'N. 0°16'W. (Sussex) JS
	x	c. 22.1.59	Queenstown: 31°54'S. 26°53'E. (Cape Province) South Africa

House Martin (*Delichon urbica*) (10: 50 miles)

60278	juv.	7.8.59	Hulver, near Beccles: 52°27'N. 1°34'E. (Suffolk) H&W
	x	30.8.59	West Mersea (Essex) 50m. SW.

Sand Martin (*Riparia riparia*) (64: 50 miles)

K38185	ad.	5.5.58	Knaresborough: 54°01'N. 1°28'W. (York) JRM
	v	12.7.59	near Appleby (Westmorland) 53m. NW.
J10359	juv.	20.6.59	near Wetherby: 53°56'N. 1°23'W. (York) JRM
	v	29.7.59	near Romford (Essex) 170m. SSE.
K42197	ad.	13.7.58	Fairburn: 53°45'N. 1°17'W. (York) CW
	()	(22.1.59)	Catral: 38°10'N. 0°47'W. (Alicante) Spain

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Birds ringed as juveniles on passage at Elm Park, near Romford, $51^{\circ}35'N$. $0^{\circ}11'E$. (Essex), were recovered as follows:

—Ringed—		—Recovered—	
86	2.8.58	27.6.59	Steep, Petersfield (Hampshire) 60m. SW.
60	5.8.58	13.6.59	near Cassington (Oxford) 65m. WNW.
72	16.8.58	27.6.59	Rothley (Leicester) 95m. NW.
461	16.8.58	25.6.59	Merley, Wimborne (Dorset) 105m. WSW.
40	2.8.59	3.8.59	Sandwich (Kent) 50m. ESE.

Great Tit (*Parus major*) (117: 20 miles)

741	ad.	3.4.58	Sudbourne: $52^{\circ}08'N$. $1^{\circ}31'E$. (Suffolk) HP
	x	23.12.59	near Lille: $50^{\circ}35'N$. $2^{\circ}54'E$. (Nord) France
155	ad. ♂	4.4.58	Littlestone: $50^{\circ}59'N$. $0^{\circ}58'E$. (Kent) DBO
	x	25.9.59	Borkel-en-Schaft: $51^{\circ}18'N$. $5^{\circ}27'E$. (Noord-Brabant) Netherlands

Blue Tit (*Parus caeruleus*) (274: 20 miles)

806	1stW.	10.3.58	Tattershall: $53^{\circ}07'N$. $0^{\circ}11'W$. (Lincoln) JSA
	x	20.12.59	Rushden (Northampton) 56m. S.
230	ad.	15.12.57	Grantham: $52^{\circ}54'N$. $0^{\circ}38'W$. (Lincoln) PJW
	x	18.1.59	Wassigny: $50^{\circ}00'N$. $3^{\circ}36'E$. (Aisne) France
195	f.g.	19.3.58	Attenborough: $52^{\circ}54'N$. $1^{\circ}14'W$. (Nottingham) JASB
	x	(15.3.59)	Bedford 60m. SE.
6	ad.	3.2.58	Leicester: $52^{\circ}38'N$. $1^{\circ}05'W$. FAB
	v	27.9.59	Sherwood (Nottingham) 24m. N.
401	ad.	13.12.57	Kettering: $52^{\circ}24'N$. $0^{\circ}44'W$. (Northampton) MJHP
	x	20.6.59	East Ham (Essex) 65m. SE.
109	f.g.	7.4.58	Stewkley: $51^{\circ}56'N$. $0^{\circ}46'W$. (Buckingham) D&Q
	x	9.3.59	Wisborough Green (Sussex) 60m. S.
320	f.g.	8.4.58	Stewkley D&Q
	x	(21.10.59)	Maltby (York) 105m. N.
299	f.g.	8.3.58	Swansea: $51^{\circ}37'N$. $3^{\circ}56'W$. (Glamorgan) MPH
	x	9.3.59	Bembridge, Isle of Wight 135m. ESE.
132	ad.	1.9.57	Cookham: $51^{\circ}34'N$. $0^{\circ}43'W$. (Berkshire) CJRT
	x	7.6.59	Highgate (Middlesex) 23m. E.
245	f.g.	13.12.57	Esher: $51^{\circ}23'N$. $0^{\circ}22'W$. (Surrey) GB
	x	15.2.59	Chelwood Gate (Sussex) 26m. SE.
182	f.g.	8.3.58	Eythorne: $51^{\circ}12'N$. $1^{\circ}17'E$. (Kent) SBRS
	x	c. 14.12.59	Marquise: $50^{\circ}48'N$. $1^{\circ}42'E$. (Pas-de-Calais) France
37	pull.	24.5.59	near Uckfield: $50^{\circ}58'N$. $0^{\circ}12'E$. (Sussex) GRM
	x	16.10.59	New Malden (Surrey) 33m. NW.
3	ad.	17.10.57	Dungeness: $50^{\circ}55'N$. $0^{\circ}59'E$. (Kent) DBO
	x	14.5.59	Hawkhurst (Kent) 21m. WNW.
88	1stW.	31.3.58	Dungeness
	x	14.4.59	Düsseldorf: $51^{\circ}13'N$. $6^{\circ}47'E$. (Nordrhein-Westfalen) Germany

is interesting to note that, with the exception of K30937, all the recoveries distance of more than twenty miles relate to birds ringed in the winter of 1957-8 at the time of the big tit irruption (see *Brit. Birds*, 53: 49-77, 99-117, 176-192).

Wren (*Troglodytes troglodytes*) (16: 5 miles)

E77630	f.g.	27.4.58	Gibraltar Point: 53°06'N. 0°21'E. (Lincoln)
	×	11.4.59	Buxton (Norfolk) 48m. ESE.
E53321	f.g.	26.10.57	Walberswick: 52°18'N. 1°41'E. (Suffolk) DBC
	v	8.6.59	Huntington (York) 165m. NW.
42746	f.g.	23.1.59	Abberton: 51°50'N. 0°53'E. (Essex)
	×	12.5.59	East Harling (Norfolk) 40m. N.
K51428	f.g.	3.1.59	Foulness: 51°36'N. 0°55'E. (Essex) F&H
	×	15.7.59	Beeles (Suffolk) 60m. NNE.
E46788	f.g.	15.10.57	Dungeness: 50°55'N. 0°59'E. (Kent)
	×	4.7.59	near Sevenoaks (Kent) 40m. NW.
K29701	f.g.	29.3.59	Dungeness
	×	10.4.59	Waregem: 50°53'N. 3°26'E. (West Flanders) Belgium

There are no previous foreign recoveries of British-ringed Wrens.

Mistle Thrush (*Turdus viscivorus*) (23: 20 miles)

R29995	f.g.	18.1.59	near Broadstairs: 51°23'N. 1°27'E. (Kent) DCHW
	+	1.11.59	Tournebu: 48°58'N. 0°20'W. (Calvados) France
S77851	pull.	19.4.59	Littlestone: 50°59'N. 0°58'E. (Kent) DBO
	+	22.11.59	near Doudeville: 49°43'N. 0°47'E. (Seine-Maritime) France

Fieldfare (*Turdus pilaris*) (3: 5 miles)

V61606	ad.	16.12.57	near Chester: 53°14'N. 2°53'W. (Cheshire) PRE
	+	(4.12.59)	(Gers) France

Song Thrush (*Turdus philomelos*) (266: 100 miles)

V76126	f.g.	31.3.58	Fair Isle: 59°32'N. 1°37'W. (Shetland)
	+	1.1.59	Mareay: 46°28'N. 0°13'E. (Vienne) France
R71312	ad.	30.6.59	near Beanley: 55°27'N. 1°59'W. (Northumberland) MHBO
	×	(16.12.59)	Enniserone (Sligo) 290m. WSW.
R66748	f.g.	19.9.59	Skinburness: 54°53'N. 3°21'W. (Cumberland) RS
	+	7.12.59	near Santander: 43°28'N. 3°48'W. Spain
V90796	ad.	24.10.58	Copeland: 54°40'N. 5°32'W. (Down)
	×	(16.2.59)	Armadales (West Lothian) 105m. NE.
R99721	f.g.	8.8.59	Masham: 54°13'N. 1°40'W. (York) RC
	+	8.12.59	Los Corrales de Buena: 43°15'N. 4°04'W. (Santander) Spain
R66584	pull.	11.7.59	near Carnforth: 54°08'N. 2°46'W. (Lancashire) JW
	+	21.10.59	near Eibar: 43°12'N. 2°26'W. (Guipúzcoa) Spain
V98118	pull.	10.6.58	Gouthwaite: 54°05'N. 1°45'W. (York) S&W
	+	27.12.59	Kilkenny 240m. WSW.
S10865	pull.	27.5.56	near Ilkley: 53°56'N. 1°49'W. (York) WNS
	×	c. 31.1.59	Ballinagh (Cavan) 225m. W.
S60623	f.g.	26.2.59	Spurn Point: 53°35'N. 0°06'E. (York)
	+	19.11.59	near Mézos: 44°02'N. 1°12'W. (Landes) France
R61243	pull.	22.5.59	near Mexborough: 53°30'N. 1°19'W. (York) GFO
	×	25.12.59	Clun (Shropshire) 100m. SW.
S28587	1st W.	1.11.57	Gibraltar Point: 53°06'N. 0°21'E. (Lincoln)
	+	7.11.59	Gazinet: 44°45'N. 0°38'W. (Gironde) France
W43082	f.g.	14.9.58	Aylsham: 52°49'N. 1°15'E. (Norfolk) CLM
	+	30.11.59	Montendre: 45°18'N. 0°25'W. (Charente-Maritime) France

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194	pull. ()	22.4.56 (18.2.59)	Shirley: 52°25'N. 1°51'W. (Warwick) AWC near Ponte do Lima: 41°46'N. 8°35'W. (Minho) Portugal
1909	f.g. +	10.10.59 21.11.59	Havering: 51°37'N. 0°11'E. (Essex) JEF near Sansol: 42°33'N. 2°15'W. (Navarra) Spain
7483	f.g. [?]	14.3.59 28.10.59	Epsom: 51°20'N. 0°16'W. (Surrey) DP near Gouarec: 48°13'N. 3°11'W. (Côtes-du-Nord) France
1178	f.g. ×	13.2.56 4.5.59	Sway: 50°47'N. 1°37'W. (Hampshire) SHS near Saxmundham (Suffolk) 165m. NE.
770	ad. ×	8.1.55 7.1.59	Dungeness: 50°55'N. 0°59'E. (Kent) Merelbeke: 51°00'N. 3°45'E. (East Flanders) Belgium
513	f.g. ×	21.9.57 c. 20.5.59	Dungeness near Knokke: 51°21'N. 3°19'E. (West Flanders) Belgium
703	1stW. +	26.11.58 (21.10.59)	Dungeness near Quiévrechain: 50°23'N. 3°38'E. (Nord) France
005	1stW. +	5.9.59 30.12.59	Dungeness near Oliveira do Hospital: 40°21'N. 7°52'W. (Alto Alentejo) Portugal

Many more British-ringed Song Thrushes (and Redwings) were recovered abroad in the autumn and winter of 1959-60 than in any previous season. It does seem possible to account for this in terms of increased ringing alone, but no other explanation suggests itself.

Redwing (*Turdus musicus*) (19: 30 miles)

251	1stW. ×	29.10.56 29.12.59	Fair Isle: 59°32'N. 1°37'W. (Shetland) Castlebar (Mayo) 485m. SSW.
721	ad. +	8.11.57 1.11.59	Fair Isle Queyrac: 45°23'N. 1°00'W. (Gironde) France
1259	f.g. ×	6.1.59 13.5.59	St. Kilda: 57°49'N. 8°34'W. Outer Hebrides DB Gleráthorp: 65°42'N. 18°07'W. Akureyri, Iceland
250	f.g. +	21.10.58 21.11.59	Spurn Point: 53°35'N. 0°06'E. (York) Nogaro: 43°46'N. 0°02'W. (Gers) France
587	f.g. +	15.10.59 15.11.59	Spurn Point near Montargis: 48°07'N. 2°45'E. (Loiret) France
005	f.g. ×	1.11.58 13.10.59	Walton: 53°22'N. 2°37'W. (Lancashire) RPC Tenstedt: 52°48'N. 8°09'E. (Niedersachsen) Germany
31X	1stW. +	7.10.59 10.12.59	Cley: 52°58'N. 1°03'E. (Norfolk) Morón de la Frontera: 37°07'N. 5°28'W. (Sevilla) Spain
300	f.g. ()	30.12.57 (25.2.59)	Blithfield: 52°49'N. 1°56'W. (Stafford) C&PM Seia: 40°25'N. 7°42'W. (Beira Alta) Portugal
792	f.g. +	27.12.58 21.10.59	Blithfield C&PM near Braune: 44°50'N. 0°14'W. (Gironde) France
034	f.g. ()	19.10.58 late 10.59	Bardsey: 52°46'N. 4°48'W. (Caernarvon) Betekom: 50°59'N. 4°47'E. (Brabant) Belgium
757	f.g. +	11.10.59 19.12.59	Bardsey Beznar: 36°57'N. 3°33'W. (Granada) Spain
80X	f.g. +	11.10.59 14.11.59	Bardsey near Ghent: 51°02'N. 3°51'E. (East Flanders) Belgium
245	f.g. ()	25.10.58 c. 10.10.59	Fulbourn Fen: 52°12'N. 0°15'E. (Cambridge) PRE Brembilla: 45°49'N. 9°37'E. (Bergamo) Italy

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W ¹⁶⁴⁹⁶	ad.	25.1.58	Dale: 51°43'N. 5°11'W. (Pembroke) SBO
	+	25.10.59	Harasjön: 60°44'N. 11°14'E. (Hedmark) Norway
V62525	f.g.	25.1.58	Epsom: 51°20'N. 0°16'W. (Surrey) CE&Q
	+	19.3.59	Makharadze: 41°56'N. 42°00'E. (Georgia) U.S.S.R.
V49214	1stW.	31.10.57	Dungeness: 50°55'N. 0°59'E. (Kent)
	+	12.3.59	near Angoulême: 45°39'N. 0°08'E. (Charente) France
V49074	1stW.	13.11.57	Dungeness
	+	7.6.59	Danilov: 58°12'N. 40°11'E. (Yaroslav) U.S.S.R.
702622	1stW.	7.12.58	near Fordingbridge: 50°53'N. 1°45'W. (Hampshire) JSA
	+	21.10.59	Morcenx: 44°02'N. 0°55'W. (Landes) France

This remarkable list of foreign recoveries, which should be compared with a total of 28 for the whole of the previous 50 years, illustrates the diversity and unpredictability of Redwing migration. The recoveries from Iceland and the U.S.S.R. are our first for the species in those countries. The first three birds listed were identified as belonging to the Icelandic race (*T. m. coburni*).

Ring Ouzel (*Turdus torquatus*) (3)

V41579	pull.	22.5.58	near Halifax: 53°45'N. 1°54'W. (York) HSS
	/2/	8.3.59	Gujan-Mestras: 44°39'N. 1°04'W. (Gironde) France
R47371	1stW.	11.10.59	Dungeness: 50°55'N. 0°59'E. (Kent)
	+	13.10.59	Valcivières: 45°36'N. 3°52'E. (Puy-de-Dôme) France
R47375	f.g.	11.10.59	Dungeness
	+	end 10.59	Le Lauzet: 44°25'N. 6°26'E. (Basses-Alpes) France

Blackbird (*Turdus merula*) (655)

S87798	1stW. ♂	14.11.57	Fair Isle: 59°32'N. 1°37'W. (Shetland)
	x	14.4.59	Pihlajalahti: 61°54'N. 28°28'E. (Mikkeli) Finland
R78333	1stW. ♀	14.10.59	Fair Isle
	()	16.10.59	Kvingo: 60°42'N. 5°20'E. Masfjorden (Hordaland) Norway
R17729	pull.	15.5.59	Moniaive: 55°12'N. 3°55'W. (Dumfries) TT
	x	12.12.59	Ballinamore (Donegal) 160m. W.
R62291	pull.	21.6.59	Langwathby: 54°42'N. 2°39'W. (Cumberland) WH
	v	11.10.59	Tory Isle (Donegal) 215m. W.
S84987	juv.	1.9.59	Scolt Head: 52°59'N. 0°45'E. (Norfolk) C&C
	+	25.10.59	near Rambouillet: 48°39'N. 1°50'E. (Seine-et-Oise) France
S61058	ad. ♂	2.11.56	Great Saltee: 52°07'N. 6°35'W. (Wexford)
	x	(9.6.59)	Camiers: 50°33'N. 1°39'E. (Pas-de-Calais) France
S90963	1stW. ♂	1.12.57	St. Osyth: 51°49'N. 1°05'E. (Essex) RWA
	+	18.9.59	Livosaari: 60°20'N. 22°00'E. (Turku ja Pori) Finland
R32442	ad. ♂	22.10.58	Dungeness: 50°55'N. 0°59'E. (Kent)
	x	30.3.59	Lohjansaari: 60°14'N. 23°50'E. (Uusimaa) Finland
S77180	f.g. ♀	22.9.57	Dungeness
	+	c. 1.1.59	Samaniego: 42°34'N. 2°38'W. (Alva) Spain
06030X	1stW. ♀	16.10.59	Portland Bill: 50°31'N. 2°27'W. (Dorset)
	x	21.11.59	near Lannion: 48°48'N. 3°17'W. (Côtes-du-Nord) France

Fifty-nine Blackbirds were recovered abroad. Fifty-two of these, together with 16 recoveries in Ireland, are summarised in Table G, below. The majority may be regarded as being of Continental origin, although the ringing dates of four

those recovered in Ireland do not preclude the possibility of their being British.

Published in full, above, are an autumn drift migrant to Norway, the third, fourth and fifth recoveries in Finland, two unusual autumn movements to France (the seemingly a reoriented drift-migrant and one, perhaps, a British bird) and two movements of native birds into north-west Ireland, the Tory Island one, 22291, actually being retrapped at a lighthouse at 0200 hours. The bird ringed on 17 Dec. is the most southerly breeding season recovery so far recorded for Blackbirds migrating to the British Isles.

TABLE G—COUNTRIES AND MONTHS OF RECOVERIES OF BLACKBIRDS (*Turdus merula*)

Country of recovery	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
May (17)	4	5	2	2	1	2	1	—	—	—	—	—
Ireland (14*)	—	—	—	—	1	2	1	—	1	2	4	2
France (6)	1	1	(1)	—	1	—	—	—	2	—	—	—
Ireland (10)	(1)	—	—	1	—	1	1	2	1	3	—	—
Ireland (2)	—	—	—	—	—	—	—	—	1	1	—	—
Ireland (1) and Belgium (1)	—	—	—	(1)	1	—	—	—	—	—	—	—
Ireland (16)	1	3	5	6	1	—	—	—	—	—	—	—

*One recovery undated.

See footnote to Table A.

Wheatear (*Oenanthe oenanthe*) (9: 60 miles)

500	1st W.	29.8.58	Fair Isle: 59°32'N. 1°37'W. (Shetland)
	×	12.4.59	Bandol: 43°08'N. 5°45'E. (Var) France
14	1st W. ♂	27.9.58	near Seahouses: 55°35'N. 1°39'W. (Northumberland) MIBO
	+	mid 3.59	near Figueira da Foz: 40°09'N. 8°51'W. (Beira Litoral) Portugal
1341	ad. ♂	11.4.58	Cannock Reservoir: 52°41'N. 1°57'W. (Stafford) RSB
	×	24.5.59	Voc (Shetland) 535m. N.
74	1st W.	17.8.59	Skokholm: 51°42'N. 5°16'W. (Pembroke)
	()	c. 12.9.59	Oliveira do Bairro: 40°32'N. 8°30'W. (Beira Litoral) Portugal
527	juv.	5.8.59	Dungeness: 50°55'N. 0°59'E. (Kent)
	[?]	(18.9.59)	near Erro: 42°57'N. 1°26'W. (Navarra) Spain

Whinchat (*Saxicola rubetra*) (3)

5325	pull.	16.6.59	Kentmere: 54°26'N. 2°51'W. (Westmorland) JWA
	×	13.9.59	near Pamplona: 42°49'N. 1°39'W. (Navarra) Spain
7103	juv.	4.10.58	Spurn Point: 53°35'N. 0°06'E. (York)
	v	26.5.59	near Buntingford (Hertford) 115m. S.
823	ad. ♂	7.9.58	Dungeness: 50°55'N. 0°59'E. (Kent)
	×	(20.10.59)	Mendigorría: 42°37'N. 1°50'W. (Navarra) Spain

Redstart (*Phoenicurus phoenicurus*) (11: 5 miles)

154	1st W. ♀	6.9.59	Isle of May: 56°11'N. 2°33'W. (Fife)
	+	12.10.59	Pechina: 36°55'N. 2°25'W. (Almería) Spain
10	pull.	12.6.59	Parkend: 51°46'N. 2°33'W. (Gloucester) C&C
	×	5.10.59	Bordeaux: 44°50'N. 0°34'W. (Gironde) France
1929	ad. ♀	18.8.59	St. Agnes: 49°53'N. 6°21'W., Scilly SABO
	()	c. 12.9.59	Oliveira do Bairro: 40°32'N. 8°30'W. (Beira Litoral) Portugal

Bluethroat (*Cyanosylvia svecica*) (1)

<i>K81795</i>	1stS. ♀	24.5.59	Fair Isle: 59°32'N. 1°37'W. (Shetland)
	×	28.5.59	Ostende: 51°13'N. 2°55'E. (West Flanders) Belgium

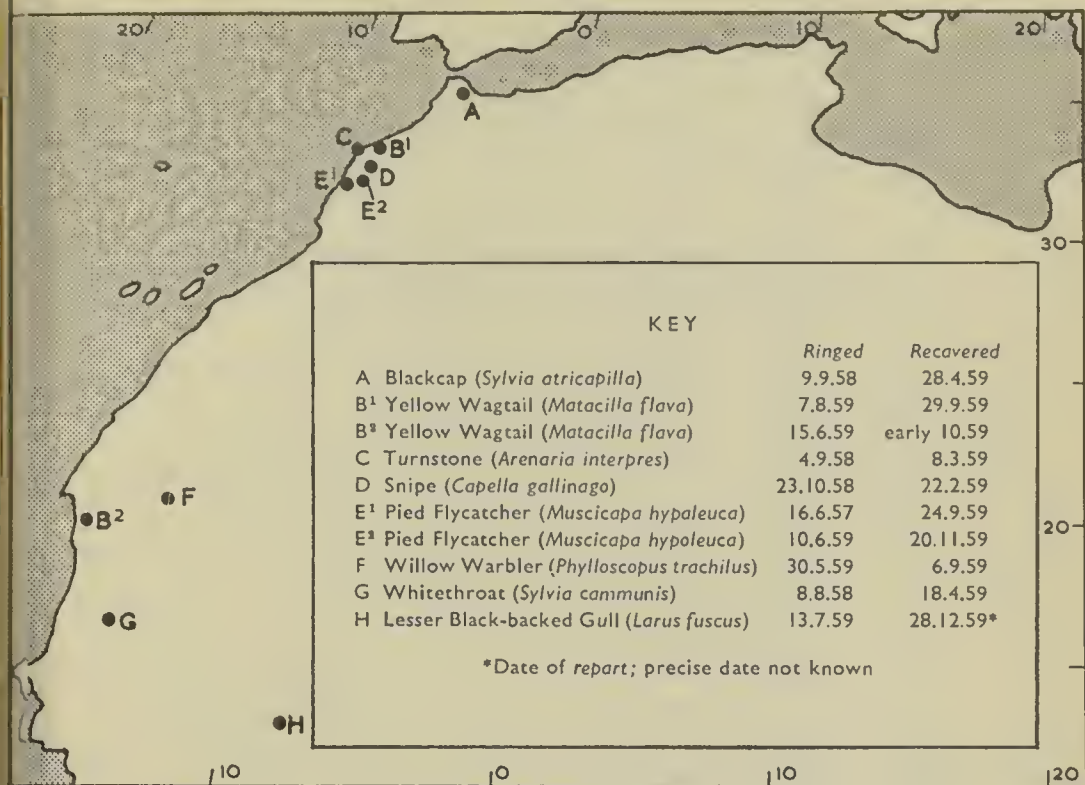
This is only the second recovery of a British-ringed Bluethroat.

Robin (*Erithacus rubecula*) (150: 60 miles)

<i>B14077</i>	f.g. +	0.2.54 12.11.59	Sleights: 54°27'N. 0°40'W. (York) ABW Tatenhill (Stafford) 120m. SSW.
<i>K37262</i>	f.g. ×	10.4.58 c. 8.4.59	Spurn Point: 53°35'N. 0°06'E. (York) Stronsay (Orkney) 390m. NNW.
<i>K73916</i>	ad. ×	6.9.58 (3.5.59)	Minsmere: 52°14'N. 1°37'E. (Suffolk) DBC Cysoing: 50°34'N. 3°13'E. (Nord) France
<i>K11454</i>	f.g. ×	9.11.58 5.4.59	Swansea: 51°38'N. 3°57'W. (Glamorgan) MPH Bay of Biscay: 47°15'N. 5°05'W. (on board ship)
<i>C57438</i>	f.g. v	8.12.57 18.1.59	Morden: 51°24'N. 0°12'W. (Surrey) MJC Holme Lacy (Hereford) 110m. WNW.
<i>K38910</i>	ad. ×	7.2.59 (23.5.59)	South Godstone: 51°14'N. 0°04'W. (Surrey) CLC Bridgwater (Somerset) 125m. W.
<i>F25843</i>	f.g. ×	27.3.58 (31.5.59)	Dungeness: 50°55'N. 0°59'E. (Kent) Mettingen: 52°19'N. 7°46'E. (Nordrhein-Westfalen) Germany
<i>F29503</i>	f.g. ×A	19.2.58 (22.4.59)	Sandown: 50°39'N. 1°09'W. Isle of Wight LK near Cardiff (Glamorgan) 110m. WNW.

Throughout early October 1959 considerable numbers of Continental Robins reached the British Isles and were ringed on an unusually large scale. The following recoveries of birds ringed about that time are listed in date order of ringing and include several from 1960 to show the latter in their context. (For an analysis of the movement see *Bird Migration*, 1(4): 176-181.)

<i>J67713</i>	1stW. ×	2.10.59 3.12.59	Dungeness: 50°55'N. 0°59'E. (Kent) Niort: 46°19'N. 0°27'W. (Deux-Sèvres) France
<i>J64701</i>	f.g. +	4.10.59 (27.2.60)	Sandwich Bay: 51°17'N. 1°20'E. (Kent) SBRS near Melo: 40°31'N. 7°32'W. (Beira Alta) Portugal
<i>J3511</i>	1stW. ×	5.10.59 21.5.60	Fair Isle: 59°32'N. 1°37'W. (Shetland) near Oslo: 59°55'N. 10°35'E. (Akershus) Norway
<i>J64579</i>	f.g. /?/	6.10.59 0.1.60	Sandwich Bay SBRS Villaviciosa: 38°05'N. 5°02'W. (Córdoba) Spain
<i>J25133</i>	f.g. ×	7.10.59 4.4.60	Minsmere: 52°14'N. 1°37'E. (Suffolk) HEA near Wittmund: 53°34'N. 7°47'E. (Niedersachsen) Germany
<i>J67866</i>	1stW. /?/	7.10.59 (14.12.59)	Dungeness São Bráz d'Alportel: 37°08'N. 7°58'W. (Algarve) Portugal
<i>J75342</i>	f.g. /?/	7.10.59 16.10.59	Portland Bill: 50°31'N. 2°27'W. (Dorset) Alameda: 37°12'N. 4°39'W. (Malaga) Spain
<i>J25157</i>	f.g. v	11.10.59 5.4.60	Minsmere HEA Fair Isle 520m. NNW.
<i>J25165</i>	f.g. ()	12.10.59 (10.11.59)	near Sizewell: 52°12'N. 1°37'E. (Suffolk) HEA Peñarroya-Pueblonuevo: 38°19'N. 5°16'W. (Córdoba) Spain
<i>53659</i>	1stW. /?/	14.10.59 c. 15.1.60	Fair Isle near Cantanhede: 40°20'N. 8°36'W. (Beira Litoral) Portugal
<i>J81001</i>	f.g. ×	22.10.59 3.4.60	Dungeness near Aurich: 53°32'N. 7°33'E. (Niedersachsen) Germany



Map 2—Some notable recent recoveries in Africa

Sedge Warbler (*Acrocephalus schoenobaenus*) (6: 20 miles)

juv.	25.7.59	Abberton: 51°50'N. 0°53'E. (Essex)
v	16.8.59	Menet: 45°18'N. 2°35'E. (Cantal) France

Blackcap (*Sylvia atricapilla*) (4: 20 miles)

1st W. ♀	17.8.59	Havering: 51°37'N. 0°11'E. (Essex) JEF
()	(12.10.59)	Algeciras: 36°08'N. 5°27'W. (Cádiz) Spain
juv.	13.9.58	near Chaldon: 51°17'N. 0°10'W. (Surrey) PW
+	21.10.59	Urrugne: 43°22'N. 1°41'W. (Basses-Pyrénées) France
ad. ♀	9.9.58	St. Catherine's Point: 50°34'N. 1°18'W. Isle of Wight BAEM
+	28.4.59	near Tetuan: 35°34'N. 5°23'W. Spanish Morocco

Garden Warbler (*Sylvia borin*) (1)

f.g.	5.5.56	Bradwell-on-Sea: 51°44'N. 0°54'E. (Essex) BrBO
x	(20.8.56)	Passirac: 45°20'N. 0°05'W. (Charente) France

Whitethroat (*Sylvia communis*) (27: 40 miles)

juv.	14.8.58	Spurn Point: 53°35'N. 0°06'E. (York)
+	20.9.59	near Portimão: 37°08'N. 8°32'W. (Algarve) Portugal
juv.	17.8.59	Hackenthorpe: 53°23'N. 1°29'W. (York) SNHS
v	12.9.59	Portland Bill (Dorset) 200m. S.

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<i>J49264</i>	ad. ×	29.7.59 27.9.59	near Runcorn: 53°21'N. 2°44'W. (Cheshire) RPC Monte Real: 39°50'N. 8°52'W. (Beira-Litoral) Portugal
<i>K65118</i>	juv. ()	8.8.58 18.4.59	Gibraltar Point: 53°06'N. 0°21'E. (Lincoln) Aéré: 16°23'N. 14°21'W. Senegal
<i>K78254</i>	ad. ♂ v	29.4.59 0.9.59	Cley: 52°58'N. 1°03'E. (Norfolk) CBO Lagos: 37°05'N. 8°40'W. (Algarve) Portugal
<i>E53525</i>	f.g. v	20.7.58 10.9.59	Walberswick: 52°18'N. 1°41'E. (Suffolk) DBC Mindelo: 41°18'N. 8°44'W. (Douro Litoral) Portugal
<i>J25080</i>	juv. v	3.7.59 9.8.59	Minsmere: 52°14'N. 1°37'E. (Suffolk) HEA Bradwell-on-Sea (Essex) 44m. SW.
<i>K45661</i>	ad. ♀ ×	2.5.59 6.5.59	Bradwell-on-Sea: 51°44'N. 0°54'E. (Essex) BrBO Syleham (Norfolk) 43m. NNE.
<i>52176</i>	1stS. ♀ v	25.5.59 13.6.59	Skokholm: 51°42'N. 5°16'W. (Pembroke) near Stormy Corner, Skelmersdale (Lancashire) 165m. NE.
<i>K91896</i>	juv. ×	31.7.59 4.9.59	Havering: 51°37'N. 0°11'E. (Essex) JEF Narón: 43°31'N. 8°09'W. (Coruña) Spain
<i>K69798</i>	ad. ♂ ×	7.5.59 c. 18.9.59	Lundy: 51°12'N. 4°40'W. (Devon) Comenda: 39°24'N. 7°47'W. (Alto Alentejo) Portugal
<i>J37090</i>	1stW. /?/	31.8.59 c. 28.12.59	Lundy Cantanhede: 40°20'N. 8°36'W. (Beira Litoral) Portugal
<i>E76304</i>	juv. +	24.8.58 6.9.59	Portland Bill: 50°31'N. 2°27'W. (Dorset) Vera de Moncayo: 41°48'N. 1°42'W. (Zaragoza) Spain
<i>K83386</i>	f.g. ()	19.7.59 8.8.59	Portland Bill near Bilbao: 43°15'N. 2°56'W. (Vizcaya) Spain
<i>K83732</i>	ad. ♀ v	2.9.59 5.9.59	Portland Bill Monforte de Lemos: 42°32'N. 7°30'W. (Lugo) Spain

K65118 is the first British-ringed Whitethroat to be recovered in Africa. *K83732* was caught at 0800 GMT and trapped at 0500 GMT three days later, thus having covered a distance of approximately 600 miles in a maximum of 69 hours.

Lesser Whitethroat (*Sylvia curruca*) (2)

<i>J70070</i>	f.g. /?/	2.9.59 22.9.59	Cholsey: 51°34'N. 1°09'W. (Berkshire) OOS Rogno: 45°52'N. 10°09'E. (Bergamo) Italy
<i>31986</i>	f.g. +	4.9.58 1.4.59	Dungeness: 50°55'N. 0°59'E. (Kent) near Batrun: 34°15'N. 35°41'E. Lebanon

There are three previous recoveries of British-ringed Lesser Whitethroats in Italy and one in Israel.

Willow Warbler (*Phylloscopus trochilus*) (10: 10 miles)

<i>E74869</i>	f.g. /?/	8.9.58 15.9.59	Isle of May: 56°11'N. 2°33'W. (Fife) Monforte de Lemos: 42°32'N. 7°30'W. (Lugo) Spain
<i>K79895</i>	ad. ×	21.8.59 18.9.59	Isle of May Rezé: 47°12'N. 1°34'W. (Loire-Atlantique) France
<i>K65986</i>	pull. v	30.5.59 6.9.59	Cregagh: 54°35'N. 5°56'W. Belfast JAC near Atar: 20°30'N. 14°45'W. Mauritania
<i>J10207</i>	pull. +	9.6.59 3.8.59	Staveley: 54°01'N. 1°28'W. (York) JRM Santibáñez: 42°48'N. 4°45'W. (Palencia) Spain
<i>K32108</i>	f.g. ×	27.7.58 (1.5.59)	Rathfarnham: 53°18'N. 6°18'W. (Dublin) RGW near Trillick (Tyronce) 90m. NW.

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ad. 10.4.58 Skokholm: 51°42'N. 5°16'W. (Pembroke)
 × 4.6.59 near Irvinestown (Fermanagh) c. 200m. NW.

65986 entered the tent of a desert patrol in arid country to the west of Atar, co-ordinates given here being supplied by a sergeant of the patrol. The bird appeared to be in good health.

Chiffchaff (*Phylloscopus collybita*) (5: 10 miles)

48 f.g. 14.9.56 Gibraltar Point: 53°06'N. 0°21'E. (Lincoln)
 /?/ 6.10.59 Zamora: 41°30'N. 5°45'W. Spain
 1? f.g. 1.5.59 Bardsey: 52°46'N. 4°48'W. (Caernarvon)
 × 19.5.59 Iniscarra (Cork) 170m. WSW.
 22 f.g. 20.9.59 Chessington: 51°21'N. 0°18'W. (Surrey) DP
 () 5.10.59 near Nazaré: 39°36'N. 9°04'W. (Estremadura) Portugal
 1 f.g. 28.9.59 Dungeness: 50°55'N. 0°59'E. (Kent)
 + 11.10.59 Agoncillo: 42°27'N. 2°17'W. (Logroño) Spain

Goldcrest (*Regulus regulus*) (1)

55 ad. ♀ 23.4.58 Copeland: 54°40'N. 5°32'W. (Down)
 v 23.11.59 Aldermaston (Berkshire) 280m. SE.

Spotted Flycatcher (*Muscicapa striata*) (6: 20 miles)

20 pull. 22.6.58 High Kelling: 52°56'N. 1°07'E. (Norfolk) GCB
 () 14.9.59 near Puente de la Reina: 42°40'N. 1°49'W. (Navarra) Spain
 5 pull. 24.6.59 Woldingham: 51°17'N. 0°02'W. (Surrey) GRM
 × 10.9.59 Alfaro: 42°11'N. 1°45'W. (Logroño) Spain
 12 f.g. 17.5.59 Portland Bill: 50°31'N. 2°27'W. (Dorset)
 × 16.8.59 near Amesbury (Wiltshire) 50m. NE.

Pied Flycatcher (*Muscicapa hypoleuca*) (7)

89 pull. 16.6.57 Hamsterley: 54°41'N. 1°49'W. (Durham) ND&N
 /?/ 24.9.59 Safi: 32°18'N. 9°15'W. Morocco
 35 f.g. 3.9.58 Gibraltar Point: 53°06'N. 0°21'E. (Lincoln)
 × c. 20.6.59 Arvesund: 63°13'N. 14°05'E. (Jämtland) Sweden
 55 pull. 15.6.58 near Capel Curig: 53°06'N. 3°54'W. (Caernarvon) RAFK
 + 18.9.59 near Coimbra: 40°12'N. 8°25'W. (Beira Litoral) Portugal
 22 pull. 14.6.59 near Capel Curig RAFK
 () c. 12.9.59 Mirandela: 41°28'N. 7°10'W. (Tras os Montes) Portugal
 1 f.g. 3.9.59 Benacre: 52°21'N. 1°43'E. (Suffolk) H&W
 + 10.10.59 Rota: 36°37'N. 6°21'W. (Cádiz) Spain
 1 pull. 6.6.58 Parkend: 51°46'N. 2°33'W. (Gloucester) C&C
 + 18.9.59 near Vila Nova de Ourém: 39°40'N. 8°35'W. (Beira Litoral) Portugal
 1 pull. 10.6.59 Parkend C&C
 + 20.11.59 Dar Si Aissa: 32°25'N. 9°05'W. Morocco

There are no previous recoveries of British-ringed Pied Flycatchers in either Scandinavia or Africa.

Dunnoek (*Prunella modularis*) (59: 25 miles)

75 f.g. 3.4.58 Spurn Point: 53°35'N. 0°06'E. (York)
 × 14.1.59 Lehe: 54°20'N. 9°02'E. (Schleswig-Holstein) Germany

BRITISH BIRDS

Meadow Pipit (*Anthus pratensis*) (20: 50 miles)

F21628	f.g. +	3.9.58 (13.11.59)	Fair Isle: 59°32'N. 1°37'W. (Shetland) Seville: 37°24'N. 5°59'W. Spain
J38976	juv. /?/	8.7.59 22.10.59	Calf of Man: 54°03'N. 4°49'W. CMRS Anglet: 43°29'N. 1°30'W. (Basses-Pyrénées) France
69237	f.g. ×	8.9.59 17.12.59	Calf of Man CMRS Castro Verde: 37°42'N. 8°05'W. (Baixo Alentejo) Portugal
69447	f.g. ×	15.9.59 1.11.59	Calf of Man CMRS near Oporto: 41°09'N. 8°37'W. (Douro Litoral) Portugal
E60405	ad. ×	14.12.58 (19.1.59)	Ilkley: 53°56'N. 1°49'W. (York) WNS near Matlock (Derby) 58m. SSE.
C16146	f.g. ×	8.9.56 (14.10.59)	Spurn Point: 53°35'N. 0°06'E. (York) Almazán: 41°29'N. 2°31'W. (Soria) Spain
K77013	f.g. /?/	17.9.58 15.10.59	Spurn Point Guiche: 43°30'N. 1°11'W. (Basses-Pyrénées) France
38816	pull. +	19.5.59 27.9.59	Bardsey: 52°46'N. 4°48'W. (Caernarvon) near Bayonne: 43°29'N. 1°27'W. (Basses-Pyrénées) France
A67564	f.g. +	1.10.55 3.1.59	Abberton: 51°50'N. 0°53'E. (Essex) near Calañas: 37°40'N. 6°53'W. (Huelva) Spain
C46454	f.g. +	17.10.56 0.12.58	Abberton Bréville: 45°48'N. 0°16'W. (Charente) France
47777	f.g. ×	25.9.59 (24.10.59)	Skokholm: 51°42'N. 5°16'W. (Pembroke) near Quimper: 48°00'N. 4°06'W. (Finistère) France
45037	f.g. ()	18.10.58 15.11.59	near Romford: 51°35'N. 0°11'E. (Essex) RRS near Loures: 38°53'N. 9°12'W. (Éstremadura) Portugal
45106	f.g. ×	28.10.58 31.10.59	near Romford RRS Aranjuez: 40°02'N. 3°37'W. (Madrid) Spain
A25444	pull. ×	23.6.57 27.1.59	Stert: 51°14'N. 3°01'W. (Somerset) JR Kérity: 48°46'N. 3°02'W. (Côtes-du-Nord) France

Recoveries of Meadow Pipits from so far east as Soria (C16146) and Madr (45106) are exceptional.

Pied/White Wagtail (*Motacilla alba*) (45: 50 miles)

K21146	pull. ×	11.7.58 20.1.59	Loch Achray: 56°13'N. 4°24'W. (Perth) JMM Doncaster (York) 225m. SE.
E60232	juv. ()	11.8.58 (18.2.59)	near Ilkley: 53°56'N. 1°49'W. (York) WNS Zebreira: 39°51'N. 7°04'W. (Beira Baixa) Portugal
610503	ad. ♀ ×	11.9.58 30.6.59	Bardsey: 52°46'N. 4°48'W. (Caernarvon) Seydisfjörður: 65°15'N. 14°01'W. Iceland
65798	1stW. +	3.9.59 c. 20.11.59	near Cambridge: 52°12'N. 0°07'E. C&PM Arcos: 36°45'N. 5°48'W. (Cádiz) Spain
65840	1stW. ×	7.9.59 26.10.59	near Cambridge C&PM Huelva: 37°15'N. 6°56'W. Spain
45716	juv. +	4.7.59 c. 1.11.59	Abberton: 51°50'N. 0°53'E. (Essex) Pombal: 39°55'N. 8°38'W. (Beira Litoral) Portugal
A95921	1stW. ×	24.2.56 22.7.59	near Romford: 51°35'N. 0°11'E. (Essex) RRS Galashiels (Selkirk) 300m. NNW.

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71	ad.	21.11.58	near Romford RRS
	×	(15.6.59)	near Cromer (Norfolk) 100m. NNE.
291	1stW.	13.9.58	St. Catherine's Point: 50°34'N. 1°18'W. Isle of Wight BAEM
	+	22.3.59	Ondárroa: 43°19'N. 2°25'W. (Vizcaya) Spain

10503 is the first recovery of a British-ringed bird of this species in Iceland. It was identified as belonging to the race *M. a. alba*.

Grey Wagtail (*Motacilla cinerea*) (3: 5 miles)

710	pull.	7.7.58	Cuddesdon: 51°44'N. 1°08'W. (Oxford) OOS
	v	26.9.59	Wartling (Sussex) 85m. SE.

Yellow Wagtail ssp. (*Motacilla flava*) (14: 50 miles)

443	pull.	12.6.58	near Kendal: 54°20'N. 2°45'W. (Westmorland) ACW
	+	0.11.59	near Alvarão: 41°38'N. 8°45'W. (Minho) Portugal
6	ad.	7.8.59	Gouthwaite: 54°05'N. 1°45'W. (York) S&W
	+	29.9.59	Dar Bouazza: 33°32'N. 7°50'W. Morocco
81	pull.	15.6.59	Wilmslow: 53°20'N. 2°15'W. (Cheshire) LAP
	×	early 10.59	Chami: 20°05'N. 15°58'W. Mauritania
183	pull.	5.6.58	Cley: 52°58'N. 1°03'E. (Norfolk)
	+	27.9.59	near Lisbon: 38°44'N. 9°08'W. (Estremadura) Portugal
16	ad. ♂	18.4.55	Abberton: 51°50'N. 0°53'E. (Essex)
	×	2.8.59	Little Langdale (Westmorland) 240m. NW.
69	juv.	16.8.58	Abberton
	()	16.4.59	Benicarló: 40°25'N. 0°25'E. (Castellón) Spain
90	f.g.	17.8.59	Christchurch: 50°44'N. 1°45'W. (Hampshire) RJJ
	()	14.9.59	Rasines: 43°18'N. 3°25'W. (Santander) Spain

Red-backed Shrike (*Lanius cristatus collurio*) (5: 5 miles)

99	pull.	14.6.59	near Lyndhurst: 50°53'N. 1°35'W. (Hampshire) RJJ
	×	29.7.59	Aldbourne (Wiltshire) 45m. N.

Starling (*Sturnus vulgaris*) (1,050)

Starlings were recovered abroad, as shown in Table H.

TABLE H—COUNTRIES AND MONTHS OF RECOVERIES OF STARLINGS (*Sturnus vulgaris*)

Year of recovery	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
(2)	—	—	—	—	—	(1)	—	—	—	—	(1)	—
n (5)	—	—	—	—	1	—	—	1	3	—	—	—
l (27*)	7	1	5	7	—	1	3	1	—	—	—	1
c (26*)	2	3	2	3	7	—	2	1	1	—	2	—
r (15)	—	1	3	6	2	2	—	—	—	—	1	—
i (12)	—	6	2	—	3	—	(1)	—	—	—	—	—
ny (47*)	10	8	10	5	6	—	5	2	—	—	—	—
(13)	2	2	4	1	—	1	1	—	1	—	—	1
s (13)	1	5	3	3	1	—	—	—	—	—	—	—
(8*)	—	4	1	1	—	—	—	1	—	—	—	—
l. (17)	—	2	3	3	1	4	1	2	—	—	1	—

*Total includes undated records.

See footnote to Table A.

BRITISH BIRDS

The months of ringing of these birds of presumed Continental origin were October, 12; November, 21; December, 21; January, 71; February, 34; March 22; and April, 4.

Six birds ringed at a roost at Welney in Cambridgeshire in the period October–November 1957 were recovered in the breeding season, two in Germany, one in Poland and three in the U.S.S.R., thus indicating that the Starlings in the large winter roosts may be of mixed origin.

The foreign recoveries amongst those set forth in full below are included in Table H.

<i>W</i> 14959	juv. ()	20.6.56 <i>end</i> 2.58	Fair Isle: 59°32'N. 1°37'W. (Shetland) "20 miles south of Iceland"
R80653	f.g. v	13.3.59 28.3.59	<i>near</i> Liverpool: 53°24'N. 2°54'W. (Lancashire) RPC Neu-Kaletka: 53°35'N. 20°34'E. (Olsztyn) Poland
R36067	f.g. v x	30.11.58 23.12.58 28.9.59	Haverhill: 52°05'N. 0°26'E. (Suffolk) JMSA Colsterworth: 52°48'N. 0°37'W. (Lincoln) 65m. NW. <i>near</i> Bremen: 53°05'N. 8°48'E. (Niedersachsen) Germany
V62797	f.g. ♀ x	14.1.58 12.1.59	Bishop's Stortford: 51°53'N. 0°09'E. (Hertford) AD Nesterov: 54°40'N. 22°35'E. (Kaliningrad) U.S.S.R.
S29575	ad. ♂ v v <i>spring</i> v	4.3.56 5.4.57 1958 10.4.59	<i>near</i> Romford: 51°35'N. 0°11'E. (Essex) RRS Elk: 53°51'N. 22°20'E. (Bialystok) Poland Elk Elk
<i>S</i> 56872	f.g. x	29.11.58 31.1.59	Chilton: 51°34'N. 1°17'W. (Berkshire) OOS <i>at sea</i> English Channel: <i>c.</i> 50°00'N. 2°50'W.

Greenfinch (*Chloris chloris*) (154: 75 miles)

R47478	f.g. ♀ v	15.10.59 13.12.59	Dungeness: 50°55'N. 0°59'E. (Kent) Armentières: 50°41'N. 2°53'E. (Nord) France
V70302	ad. ♀ x	22.1.58 12.5.59	Shorcham: 50°50'N. 0°16'W. (Sussex) JS Saxmundham (Suffolk) 120m. NE.

Goldfinch (*Carduelis carduelis*) (20: 5 miles)

<i>J</i> 76638	1stW. +	5.9.59 (2.12.59)	Cliffe: 51°28'N. 0°30'E. (Kent) G&W <i>near</i> Logroño: 42°26'N. 2°27'W. Spain
51230	juv. ()	21.7.59 3.10.59	Leybourne: 51°18'N. 0°28'E. (Kent) EGP Menin: 50°48'N. 3°07'E. (West Flanders) Belgium
33598	f.g. +	21.6.59 22.11.59	Holwell: 50°56'N. 1°54'W. (Dorset) RFH Peñaranda: 40°54'N. 5°13'W. (Salamanca) Spain
K71395	juv. ()	4.9.58 7.11.59	Holwell RFH Pamplona: 42°49'N. 1°39'W. (Navarra) Spain
K49796	f.g. x	8.8.58 <i>c.</i> 16.2.59	Cranborne: 50°55'N. 1°56'W. (Dorset) RFH St. Geours: 43°41'N. 1°14'W. (Landes) France
E46431	f.g. ()	2.10.57 <i>c.</i> 1.9.59	Dungeness: 50°55'N. 0°59'E. (Kent) Fontenoy: 50°34'N. 3°29'E. (Hainaut) Belgium

(For an analysis of finch movements and recoveries in the winter of 1959 see *Bird Migration*, 1(4): 176–181.)

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Linnet (*Carduelis cannabina*) (33: 70 miles)

85	1stW. ×	7.10.58	near Seahouses: 55°35'N. 1°39'W. (Northumberland)	MHBO
		2.11.59	Pompignac: 44°50'N. 0°33'W. (Gironde)	France
167	pull. ×	18.6.57	South Shields: 55°00'N. 1°25'W. (Durham)	ND&N
		(31.10.59)	Mézos: 44°05'N. 1°10'W. (Landes)	France
970	pull. [?]	6.6.59	Knaresborough: 54°01'N. 1°28'W. (York)	S&W
		c. 15.11.59	St. Geours: 43°41'N. 1°14'W. (Landes)	France
9	juv. +	5.7.59	Attenborough: 52°54'N. 1°14'W. (Nottingham)	JASB
		12.11.59	Tosse: 43°41'N. 1°20'W. (Landes)	France
2	juv. ()	6.7.59	Bardsey: 52°46'N. 4°48'W. (Caernarvon)	
		18.10.59	Messanges: 43°49'N. 1°23'W. (Landes)	France
5	pull. ×	19.5.59	near Nuncaton: 52°32'N. 1°28'W. (Warwick)	HL
		3.11.59	near Sauveterre: 44°42'N. 0°04'W. (Gironde)	France
194	juv. ()	13.6.59	Havering: 51°37'N. 0°11'E. (Essex)	JEF
		21.10.59	St. Perdon: 43°52'N. 0°34'W. (Landes)	France
176	f.g. ×	25.7.59	Havering	JEF
		4.11.59	Capbreton: 43°38'N. 1°25'W. (Landes)	France
90	f.g. ×	19.7.59	Foulness: 51°36'N. 0°55'E. (Essex)	GD
		0.11.59	St. Genes: 45°02'N. 0°25'W. (Gironde)	France
88	pull. [?]	12.7.59	Foulness	GD
		25.10.59	St. Vincent de Tyrosse: 43°39'N. 1°18'W. (Landes)	France
51	ad. ♂ +	24.6.59	East Tilbury: 51°28'N. 0°26'E. (Essex)	ABO
		8.11.59	St. Sulpice: 44°51'N. 0°12'W. (Gironde)	France
133	f.g. v	15.8.59	Cliffe: 51°28'N. 0°30'E. (Kent)	G&W
		3.11.59	Sare: 43°19'N. 1°34'W. (Basses-Pyrénées)	France
4	f.g. ♂ +	19.9.59	Cliffe	G&W
		14.11.59	St. Vincent de Tyrosse, France	
76	f.g. ♀ +	20.4.59	Sandwich Bay: 51°17'N. 1°20'E. (Kent)	SBRS
		29.10.59	Bidart: 43°26'N. 1°35'W. (Basses-Pyrénées)	France
73	ad. ♂ +	22.6.58	Dungeness: 50°55'N. 0°59'E. (Kent)	
		27.2.59	Salies-de-Béarn: 43°28'N. 0°55'W. (Basses-Pyrénées)	France

Redpoll (*Carduelis flammea*) (4)

2	f.g. ♀ ()	4.5.59	near Ford: 55°38'N. 2°05'W. (Northumberland)	MHBO
		15.10.59	Quaregnon: 50°27'N. 3°52'E. (Hainaut)	Belgium
7	ad. ♂ ()	20.8.59	The Cheviot: c. 55°30'N. 2°14'W. (Northumberland)	MHBO
		15.11.59	near St. Geneviève: 44°50'N. 2°50'E. (Aveyron)	France
106	pull. ()	31.5.59	Knowsley: 53°27'N. 2°52'W. (Lancashire)	AMW
		0.11.59	near Sittard: 50°57'N. 5°54'E. (Zuid-Limburg)	Netherlands
23	f.g. ()	14.9.57	Gibraltar Point: 53°06'N. 0°21'E. (Lincoln)	
		11.2.59	Anderlues: 50°24'N. 4°16'E. (Hainaut)	Belgium

Chaffinch (*Fringilla coelebs*) (61: 10 miles)

104	ad. ♂ ×	8.11.55	near Seahouses: 55°35'N. 1°39'W. (Northumberland)	MHBO
		24.3.59	at sea 45 miles W. of Esbjerg: c. 55°30'N. 7°20'E.	Denmark
23	f.g. ♂ ×	8.4.58	Spurn Point: 53°35'N. 0°06'E. (York)	
		24.4.59	Frogmore (Hertford) 130m. S.	

BRITISH BIRDS

<i>E77751</i>	ad. ♀ ()	4.7.58 c. 10.11.59	Gibraltar Point: 53°06'N. 0°21'E. (Lincoln) Duisburg: 51°26'N. 6°45'E. (Nordrhein-Westfalen) German
<i>E89098</i>	f.g. ♂ ()	1.1.58 12.10.59	Blithfield: 52°46'N. 1°55'W. (Stafford) C&PM Oudenaarde: 50°50'N. 3°37'E. (East Flanders) Belgium
<i>E89118</i>	f.g. ♂ ×	1.1.58 (23.12.59)	Blithfield C&PM near Sønder Nissum: 56°19'N. 8°12'E. (Jutland) Denmark
<i>C78914</i>	f.g. ♂ ×	19.1.57 c. 28.10.59	Burnham Beeches: 51°32'N. 0°40'W. (Buckingham) JFP Kruibeke-Waas: 51°10'N. 4°19'E. (East Flanders) Belgium
<i>E85548</i>	ad. ♂ ×	18.1.58 15.10.59	Stockbury: 51°20'N. 0°42'E. (Kent) EGP Gesbold: 52°13'N. 8°16'E. (Niedersachsen) Germany
<i>E82723</i>	f.g. ♂ ()	26.12.58 24.10.59	Betteshanger: 51°14'N. 1°18'E. (Kent) AP Ravels: 51°22'N. 5°00'E. (Antwerp) Belgium
<i>K84596</i>	f.g. ♂ ×	7.12.58 18.3.59	Hythe: 51°06'N. 1°04'E. (Kent) HS near Ahaus: 52°05'N. 7°02'E. (Westfalen) Germany
<i>K86997</i>	ad. ♂ ()	3.12.58 11.3.59	Blandford: 50°52'N. 2°08'W. (Dorset) BS Schoten: 51°15'N. 4°30'E. (Antwerp) Belgium

Snow Bunting (*Plectrophenax nivalis*) (3: 10 miles)

<i>K77435</i>	1st W. ♂ ×	26.12.58 8.5.59	Spurn Point: 53°35'N. 0°06'E. (York) Breiddalsvik: 64°48'N. 14°01'W. Iceland
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This is the first recovery of a British-ringed Snow Bunting in Iceland.

House Sparrow (*Passer domesticus*) (232: 20 miles)

<i>C92724</i>	ad. ♀ ×	16.10.57 3.7.59	Spurn Point: 53°35'N. 0°06'E. (York) Middleton (York) 57m. NW
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Tree Sparrow (*Passer montanus*) (11: 15 miles)

<i>K23892</i>	ad. v	1.3.59 4.4.59	Guildford: 51°14'N. 0°34'W. (Surrey) GRG Gidea Park (Essex) 40m. NE.
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Recoveries in Great Britain and Ireland of birds ringed abroad

By *E. P. Leach*

Selected list of recoveries reported

The symbols and terms are the same as those used in the "Report on bird-ringing (see page 467), with the exception that the term "juv." cannot always be relied upon to signify a young bird that is able to fly freely: owing to lack of unanimity in the various ringing schemes, this term may sometimes mean a nestling or chick

Abbreviations used for ringing stations

	Brussels	P.	Paris
	Copenhagen	Port.	University of Oporto
	Gothenburg	Rk.	Reykjavik
	Heligoland	San S.	San Sebastian (Grupo "Aranzadi")
	Helsinki	Stav.	Stavanger
R.S.	Helsinki Riista Säätiö (Game Research Institute)	St.	Stockholm
	Leiden	St. Orn.	Stockholm "Ornis" (Sveriges Ornithologiska Förening)
	Moscow	S.J.F.	Svenska Jägare Förbundet
	Oslo		

A welcome development shown up in this report, and one which would have been a special pleasure to the late H. F. Witherby, is the emergence of an organised ringing effort in the Iberian peninsula, a region of so much importance as a migratory route. Spain and Portugal have always contributed substantially to recoveries, and now we have, for example, Goldfinches being ringed in both these countries and recovered in England as a parallel to others ringed in Kent and Dorset and recovered in Spain. It is to be hoped that this initiative will flourish.

The recovery in Essex of a Red-throated Diver ringed as a young bird in south-west Greenland is something new and, contrary to what earlier seemed an established pattern, the recoveries of Teal ringed in the Camargue out of the breeding season included quite a number in England, Wales and Ireland. Ireland also produced a January recovery of a Belgian-ringed Garganey duck, while Scotland recorded the first foreign-marked Waxwing to be recorded here, only six weeks after it had been ringed in Sweden.

Once more there is evidence of an impressive invasion of young gulls—Great Black-backed and Herring as well as Common—from the U.S.S.R. in addition to Scandinavia, while a Herring Gull hatched on Ushant, France, arrived here from the opposite direction.—Eds.]

Red-throated Diver (*Gavia stellata*)

pull. 5.7.50 Ikamiut: 68°38'N. 51°51'W. Greenland
 × A autumn 1959 North Fambridge: 51°39'N. 0°41'E. (Essex)

This is the first recovery in the British Isles of any species of diver bearing a foreign ring.

Manx Shearwater (*Procellaria puffinus*)

ad. 7.4.59 Phare du Creac'h: 48°28'N. 5°05'W. Ushant, France
 v 1.7.59 Skokholm: 51°42'N. 5°16'W. (Pembroke)

Heron (*Ardea cinerea*)

The first four were all ringed as nestlings on 30.5.57 at Sund, 60°17'N. 5°10'E. (Västmanland), Norway.

3 × 21.1.58 Aywick: 60°34'N. 1°02'W. Yell, Shetland
 4 × 27.2.58 Dalry: 55°42'N. 4°42'W. (Ayrshire)
 9 × 22.3.58 Long Hope: 58°48'N. 3°12'W. Orkney
 4 × 19.1.58 Halbeath: 56°06'N. 3°26'W. (Fife)
 pull. 8.6.58 Västerås: 59°36'N. 16°30'E. (Västmanland) Sweden
 18 + 29.9.59 Bibury: 51°45'N. 1°48'W. (Gloucester)

Mallard (*Anas platyrhynchos*)

<i>Hki.</i>	juv.	10.7.58	Pori: 61°30'N. 21°45'E. Finland
H29693	+	1.12.59	Hetton Hall: 55°35'N. 1°56'W. (Northumberland)
<i>Hki.</i>	juv.	18.7.58	Pori, Finland
H25883	+	28.11.59	Riccall: 53°50'N. 1°04'W. (York)
<i>Hki. R.S.</i>	juv.	9.6.58	Pori, Finland
20728	+	16.12.59	Narborough: 52°41'N. 0°35'E. (Norfolk)
<i>S.J.F.</i>	juv.	24.6.59	Borviksbruk: 59°21'N. 12°58'E. (Värmland) Sweden
107587	+	18.11.59	Port Clarence: 54°36'N. 1°12'W. (Durham)
<i>H.</i>	♀	3.12.58	Celle: 52°37'N. 10°05'E. (Hanover) Germany
399244	+	25.9.59	Londonderry: 55°01'N. 7°18'W.

In addition to the records detailed above which, with one exception, indicate the native places of the birds, there are many others showing the annual influx of migrants from Belgium and Holland spreading out widely over Britain and Ireland.

Teal (*Anas crecca*)

<i>M.</i>	juv.	2.8.59	Abia-Paluoai: 58°02'N. 24°51'E. Estonian S.S.R.
E481323	+	14.11.59	Wansford: 52°34'N. 0°25'W. (Northampton)
<i>Hki.</i>	juv.	17.6.59	Töysä: 62°36'N. 23°44'E. Finland
C77949	v	28.9.59	Abberton: 51°50'N. 0°53'E. (Essex)
<i>Hki.</i>	juv.	15.7.59	Pori: 61°30'N. 21°45'E. Finland
C81142	+	9.9.59	Estuary of R. Duddon: 54°14'N. 3°13'W. (Lancashire)
<i>Hki. R.S.</i>	juv.	10.7.59	Kauhava: 63°08'N. 23°15'E. Finland
12150	v	28.11.59	Abberton: 51°50'N. 0°53'E. (Essex)
	v	2.12.59	Abberton
	v	6.12.59	Abberton
<i>S.J.F.</i>	juv.	13.6.58	Puoltikasvaara: 67°26'N. 21°08'E. (Norrbotten) Sweden
57979	+	12.10.59	Tynan Abbey: 54°20'N. 6°50'W. (Armagh)
<i>C.</i>	ad. ♂	19.6.57	Amager: 55°40'N. 12°38'E. (Zealand) Denmark
583537	+	1.12.59	Hexham: 54°58'N. 2°06'W. (Northumberland)
<i>P.</i>	1stW. ♂	26.11.57	Le Sambuc: 43°31'N. 4°42'E. (Bouches-du-Rhône) France
EC1828	v	27.12.57	Le Sambuc
	+	(20.1.59)	Stodmarsh: 51°18'N. 1°13'E. (Kent)
<i>P.</i>	1stW. ♀	4.12.57	Le Sambuc, France
DB963	+	12.9.59	Horsted Keynes: 51°00'N. 0°06'W. (Sussex)
<i>P.</i>	♂	19.12.57	Le Sambuc, France
EC7164	+	30.12.59	near Wooler: 55°33'N. 2°01'W. (Northumberland)
<i>P.</i>	1stW. ♀	7.1.58	Le Sambuc, France
DB7624	v	4.2.58	Le Sambuc
	+	27.1.59	Exbury: 50°48'N. 1°24'W. (Hampshire)
<i>P.</i>	1stW. ♂	15.3.58	Le Sambuc, France
ED6820	+	12.1.59	Leiston: 52°13'N. 1°35'E. (Suffolk)
<i>P.</i>	1stW. ♀	18.12.58	Le Sambuc, France
ED8085	+	10.12.59	East Somerton: 52°43'N. 1°40'E. (Norfolk)
<i>P.</i>	1stW. ♂	23.12.58	Le Sambuc, France
ED8151	+	27.10.59	Beelsby: 53°30'N. 0°11'W. (Lincoln)
<i>P.</i>	1stW. ♀	31.12.58	Le Sambuc, France
ED8409	+	6.12.59	Orford: 52°06'N. 1°33'E. (Suffolk)
<i>P.</i>	1stW. ♂	13.1.59	Le Sambuc, France
ED9681	+	14.10.59	Isle of Sheppey: 51°25'N. 0°50'W. (Kent)

FOREIGN-RINGED RECOVERIES

50	1st W. ♂	17.1.59	Le Sambuc, France
	+	27.12.59	Brumlosh: 53°22'N. 7°55'W. (Roscommon)
18	1st W. ♀	24.1.59	Le Sambuc, France
	+	16.9.59	Lough Neagh: c. 54°34'N. 6°16'W. (Antrim)
14	1st W. ♂	9.2.59	Le Sambuc, France
	+	18.9.59	near Newport: 51°34'N. 2°59'W. (Monmouth)

The first six recoveries have been selected because they show breeding localities. The remainder have been detailed to point out the increasing number of records in Britain and Ireland of Teal ringed out of the breeding-season in the Camargue. Apart from these, there are numerous recoveries each season of birds trapped in France, Germany, and Holland.

Garganey (*Anas querquedula*)

8	♀	29.3.55	Mectkerke: 51°14'N. 3°09'E. (West Flanders) Belgium
	/?/	24.1.58	New Ross: 52°23'N. 6°57'W. (Wexford)

Wigeon (*Anas penelope*)

1	ad. ♂	18.2.56	Wülfrath: 51°17'N. 7°03'E. (Westfalen) Germany
	+	15.1.57	Pawlett: 51°12'N. 3°00'W. (Somerset)
5	♀	5.2.58	Haarsteeg: 51°43'N. 5°13'E. (N. Brabant) Holland
	+	31.10.59	Munlochy: 57°33'N. 4°14'W. (Ross)
2	♂	12.3.58	Haarsteeg, Holland
	+	winter 1959/60	near Abberton: 51°50'N. 0°53'E. (Essex)

Pintail (*Anas acuta*)

43	juv.	6.7.58	Matsalu Bay: 58°44'N. 23°46'E. Estonian S.S.R.
	+	19.9.59	Ince: 53°17'N. 2°50'W. (Cheshire)
4	♀	24.1.59	Haarsteeg: 51°43'N. 5°13'E. (N. Brabant) Holland
	+	12.10.59	Iken: 52°09'N. 1°31'E. (Suffolk)

Shoveler (*Spatula clypeata*)

6	juv.	3.6.51	Öksnacs: 55°13'N. 11°22'E. (Zealand) Denmark
	+	30.1.54	Braunton: 51°07'N. 4°10'W. (Devon)

Tufted Duck (*Aythya fuligula*)

0	juv.	13.8.58	Boda: 61°32'N. 16°53'E. (Hälsingland) Sweden
	+	1.1.59	Loch Eaval: 57°37'N. 7°29'W. North Uist, Outer Hebrides

Shelduck (*Tadorna tadorna*)

8	juv.	1.8.54	Korsör: 55°20'N. 11°09'E. (Zealand) Denmark
	+	14.12.54	Barrow-in-Furness: 54°08'N. 3°14'W. (Lancashire)
6	f.g.	31.8.52	Estuary of R. Weser: c. 53°50'N. 8°20'E. Germany
	×	(9.6.59)	Dunwich: 52°17'N. 1°39'E. (Suffolk)
2	f.g.	17.8.58	Estuary of R. Weser, Germany
	(leg only)	2.8.59	Sandyhills Bay: 54°53'N. 3°44'W. (Kirkcudbright)

Pink-footed Goose (*Anser arvensis brachyrhynchus*)

A good many Pink-footed Geese which had been ringed in central Iceland were shot on the British wintering grounds. There were still a few carrying rings dating from 1951 but, as might be expected, the rings of the 1953 expedition numbered them.

BRITISH BIRDS

Sparrowhawk (*Accipiter nisus*)

<i>Hki.</i>	juv. ♀	3.9.57	Signilskär: 60°12'N. 19°22'E. Åland Is. Finland
C56931	+	24.12.57	Woodbastwick: 52°41'N. 1°28'E. (Norfolk)

Kestrel (*Falco tinnunculus*)

<i>S.J.F.</i>	pull.	10.7.59	Flakaträsk: 64°15'N. 18°31'E. (Lappmark) Sweden
80804	v	30.10.59	Swadlincote: 52°47'N. 1°34'W. (Derby)

This is the first Swedish-ringed Kestrel to be recovered in Britain.

Water Rail (*Rallus aquaticus*)

<i>H.</i>	f.g.	9.11.58	Heligoland: 54°11'N. 7°55'E. Germany
6182844	x	0.10.59	Sloothby: 53°13'N. 0°15'E. (Lincoln)

Oystercatcher (*Haematopus ostralegus*)

<i>Rk.</i>	pull.	24.6.59	Gardar: 64°49'N. 23°08'W. Iceland
54429	x (<i>cat</i>)	15.10.59	Bantry: 51°41'N. 9°27'W. (Cork)
<i>Rk.</i>	pull.	9.6.57	Westmann Is.: 63°24'N. 20°17'W. Iceland
55821	+	c. 21.10.59	Ard: 53°19'N. 9°51'W. Moyrus (Galway)

Lapwing (*Vanellus vanellus*)

<i>M.</i>	pull.	7.6.57	near Puhtu: 58°33'N. 23°31'E. Estonian S.S.R.
D218802	x	23.3.59	near Henley-in-Arden: 52°17'N. 1°47'W. (Warwick)
<i>Stav.</i>	pull.	30.5.55	Time: 58°43'N. 5°38'E. (Rogaland) Norway
616843	x (<i>wires</i>)	22.1.58	Urlingford: 52°45'N. 7°40'W. (Kilkenny)
<i>Stav.</i>	pull.	16.5.57	Time, Norway
618006	x	16.4.58	South Ronaldshay: c. 58°50'N. 2°55'W. Orkney
<i>Stav.</i>	pull.	7.6.57	Time, Norway
621272	x	(21.4.58)	Lydiate: 53°33'N. 2°59'W. (Lancashire)
<i>Stav.</i>	pull.	6.6.55	Sokndal: 58°20'N. 6°17'E. (Rogaland) Norway
613505	+	4.12.58	Southport: 53°39'N. 3°00'W. (Lancashire)
<i>Stav.</i>	pull.	20.5.56	Klepp: 58°44'N. 5°33'E. (Rogaland) Norway
611644	x	15.5.58	Ladybank: 56°17'N. 3°08'W. (Fife)
<i>Stav.</i>	pull.	18.6.58	Sola: 58°53'N. 5°38'E. (Rogaland) Norway
624393	x	(20.10.58)	Hetton-le-Hole: 54°49'N. 1°28'W. (Durham)
<i>S.J.F.</i>	pull.	12.5.57	Älgå: 59°39'N. 12°30'E. (Värmland) Sweden
43423	x	19.2.59	Stoke Lyne: 51°57'N. 1°11'W. (Oxford)
<i>C.</i>	pull.	17.5.52	Höjer: 54°58'N. 8°42'E. (Jutland) Denmark
595586	x	7.2.54	Falmouth: 50°08'N. 5°04'W. (Cornwall)
<i>C.</i>	pull.	24.5.52	Amager: 55°40'N. 12°38'E. (Zealand) Denmark
695401	x	20.12.54	near Selby: 53°47'N. 1°05'W. (York)
<i>C.</i>	pull.	13.5.51	Korsör: 55°20'N. 11°09'E. (Zealand) Denmark
694441	+	25.1.53	Lough Corrib: 53°27'N. 9°16'W. (Galway)
<i>H.</i>	pull.	4.5.55	Gifhorn: 52°29'N. 10°33'E. (Hanover) Germany
6186401	x	12.2.59	Ulnes Walton: 53°40'N. 2°43'W. (Lancashire)
<i>L.</i>	ad. ♀	17.3.54	Reeuwijk: 52°03'N. 4°42'E. Holland
241553	+	26.2.56	Ballylanders: 52°22'N. 8°21'W. (Limerick)

Ringed Plover (*Charadrius hiaticula*)

<i>H.</i>	pull.	21.6.59	Heligoland: 54°11'N. 7°55'E. Germany
8933958	x	7.9.59	Tollesbury: 51°46'N. 0°50'E. (Essex)

FOREIGN-RINGED RECOVERIES

Golden Plover (*Charadrius apricarius*)

pull.	19.6.56	Westmann Is.: 63°24'N. 20°17'W. Iceland
+	12.10.59	Mageney: 52°54'N. 6°55'W. (Kildare)
ad.	8.8.57	Midnes: 64°04'N. 22°43'W. Iceland
+	6.2.59	Newport: 53°53'N. 9°33'W. (Mayo)
f.g.	13.10.58	Midnes, Iceland
+	8.2.59	Cleggan: 53°33'N. 10°07'W. (Galway)
ad.	8.9.59	Midnes, Iceland
+	23.12.59	Glanamman: 51°48'N. 3°56'W. (Carmarthen)
f.g.	23.3.56	Onderdendam: 53°20'N. 6°35'E. (Groningen) Holland
+	0.2.59	Bodmin Moor: c. 50°35'N. 4°35'W. (Cornwall)
f.g.	23.3.56	Munnekenzyl: 53°18'N. 6°16'E. (Friesland) Holland
+	15.10.59	Covenham: 53°27'N. 0°01'E. (Lincoln)

Turnstone (*Arenaria interpres*)

ad.	15.5.54	Midnes: 64°04'N. 22°43'W. Iceland
× (cat)	7.1.59	Isle of Bernera: 57°44'N. 7°10'W. North Uist, Outer Hebrides

Snipe (*Capella gallinago*)

pull.	25.5.52	Heskestad: 58°28'N. 6°25'E. (Rogaland) Norway
+	6.10.56	Stodmarsh: 51°18'N. 1°13'E. (Kent)
f.g.	30.8.51	Amager: 55°40'N. 12°38'E. Denmark
+	11.1.53	Portarlinton: 53°09'N. 7°11'W. (Leix)
f.g.	31.7.53	Amager, Denmark
+	0.2.54	Saxmundham: 52°12'N. 1°30'E. (Suffolk)

Woodcock (*Scolopax rusticola*)

f.g.	21.11.55	Rijs: 52°52'N. 5°29'E. (Friesland) Holland
+	21.1.56	Riddlesworth: 52°24'N. 0°54'E. (Norfolk)

Curlew (*Numenius arquata*)

pull.	3.6.59	Töysä: 62°36'N. 23°44'E. Finland
+	3.11.59	North Cotes: 53°29'N. 0°03'E. (Lincoln)
pull.	14.6.58	Eurajoki: 61°15'N. 21°44'E. Finland
+	17.1.59	Long Sutton: 52°47'N. 0°08'E. (Lincoln)
pull.	16.6.52	Time: 58°43'N. 5°38'E. (Rogaland) Norway
×	10.2.58	Ballinlough: 53°44'N. 8°38'W. (Roscommon)
ad.	8.5.58	Scharhörn: 53°58'N. 8°25'E. R. Elbe, Germany
+	1.9.59	near Walton-on-the-Naze: 51°52'N. 1°17'E. (Essex)
f.g.	15.5.59	Le Zoute: 51°20'N. 3°17'E. (West Flanders) Belgium
×	13.12.59	Terrington Marshes: 52°48'N. 0°18'E. (Norfolk)

Dunlin (*Calidris alpina*)

ad.	6.9.58	Pori: 61°30'N. 21°45'E. Finland
v	18.8.59	Terrington Marshes: 52°48'N. 0°18'E. (Norfolk)
f.g.	23.5.59	Midnes: 64°04'N. 22°43'W. Iceland
×	10.8.59	Widemouth Bay: 50°47'N. 4°34'W. (Cornwall)
f.g.	26.7.59	Baugstadir: 63°49'N. 20°58'W. Iceland
v	23.8.59	Burton: 53°16'N. 3°02'W. (Cheshire)
f.g.	30.9.56	Revtangen: 58°45'N. 5°30'E. (Rogaland) Norway
+	0.1.58	Brancaster Staithe: 52°58'N. 0°41'E. (Norfolk)

BRITISH BIRDS

<i>Stav.</i> 851585	f.g. v	28.9.57 6.11.59	Revtangen, Norway Cherry Cobb Sands: 53°41'N. 0°10'W. Humber (York)
<i>Stav.</i> 851260	f.g. x	11.10.57 (1.2.58)	Revtangen, Norway Larne: 54°50'N. 5°50'W. (Antrim)
<i>Stav.</i> 851277	f.g. x	11.10.57 0.1.58	Revtangen, Norway Teesmouth: 54°31'N. 1°12'W. (Durham)
<i>Stav.</i> 750220	f.g. x	6.10.58 16.11.58	Revtangen, Norway Estuary of R. Dee: c. 53°20'N. 3°10'W. (Flint)
<i>St. Orn.</i> 101174	ad. x	14.7.53 18.1.59	Ottenby: 56°13'N. 16°25'E. Öland, Sweden Pagham: 50°46'N. 0°43'W. (Sussex)
<i>St. Orn.</i> 502028	ad. x	16.7.53 10.2.58	Ottenby, Sweden Bacton: 52°51'N. 1°29'E. (Norfolk)
<i>C.</i> 881782	ad. x	9.8.51 17.3.54	Amager: 55°40'N. 12°38'E. Denmark Scraby: 52°42'N. 1°42'E. (Norfolk)
<i>C.</i> 885630	ad. +	19.4.53 6.12.54	Amager, Denmark Ballykelly: 55°03'N. 7°02'W. (Londonderry)
<i>C.</i> 889483	juv. x	6.9.53 6.3.54	Amager, Denmark Newbiggin: 55°12'N. 1°30'W. (Northumberland)
<i>C.</i> 889593	juv. +	10.9.53 22.12.54	Amager, Denmark Blakeney: 52°58'N. 1°01'E. (Norfolk)
<i>C.</i> 887804	juv. x	5.10.53 27.1.54	Amager, Denmark Vale: 49°29'N. 2°31'W. Guernsey
<i>C.</i> 822612	f.g. +	11.8.58 10.1.59	Amager, Denmark Breydon Water: 52°37'N. 1°42'E. (Norfolk)
<i>C.</i> 822205	ad. v	22.7.59 18.8.59	Amager, Denmark Terrington Marshes: 52°48'N. 0°18'E. (Norfolk)

In the "Report on bird-ringing for 1958" (*Brit. Birds*, 52: 464), attention was drawn to the first recovery in Iceland of a British-ringed Dunlin; and in the connection it is of interest to note that in the above list two Iceland-ringed Dunlins are recorded for the British Isles for the first time.

Great Black-backed Gull (*Larus marinus*)

<i>M.</i> D429191	pull. x	18.7.58 8.3.59	Great Ainov Is.: 69°50'N. 31°35'E. U.S.S.R. Walney Island: 54°04'N. 3°14'E. (Lancashire)
<i>M.</i> D429192	pull. x	18.7.58 20.3.59	Great Ainov Is., U.S.S.R. Barn Elms Reservoir: 51°29'N. 0°15'W. (Surrey)
<i>M.</i> D429298	pull. x	9.7.58 (23.9.59)	Great Ainov Is., U.S.S.R. near Great Dunmow: 51°53'N. 0°22'E. (Essex)
<i>M.</i> C94051	pull. x	28.6.59 19.12.59	Great Ainov Is., U.S.S.R. Boulmer: 55°26'N. 1°34'W. (Northumberland)
<i>Stav.</i> 035052	pull. v	8.6.52 24.2.59	Rott: 58°55'N. 5°30'E. (Rogaland) Norway Brightlingsea: 51°49'N. 1°02'E. (Essex)

Lesser Black-backed Gull (*Larus fuscus*)

<i>G.</i> D45253	pull. /?	6.7.55 7.9.59	Kville: 58°34'N. 11°23'E. (Bohuslän) Sweden Enfield Lock: 51°41'N. 0°01'W. (Middlesex)
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Herring Gull (*Larus argentatus*)

<i>M.</i> D428056	pull. v	14.7.58 (3.3.59)	Kandalaksha: 67°02'N. 32°35'E. U.S.S.R. off Wick (Caithness)
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FOREIGN-RINGED RECOVERIES

832	pull.	10.7.58	Great Ainov Is.: 69°50'N. 32°35'E. U.S.S.R.
	x	15.5.59	Todhills: 56°33'N. 2°56'W. (Angus)
8	pull.	7.8.55	Bleik: 69°17'N. 16°00'E. Vesterålen, Norway
	x	16.3.58	Tunstall: 53°46'N. 0°02'W. (York)
7	pull.	21.7.57	Bleik, Norway
	x	18.6.58	Newcastle upon Tyne: 54°58'N. 1°36'W. (Northumberland)
8	pull.	19.6.57	Runde: 62°25'N. 5°38'E. (Sunnmøre) Norway
	x	16.7.58	Deerness: 58°55'N. 2°43'W. Orkney
12	pull.	19.6.59	Ushant: 48°28'N. 5°05'W. France
	x	1.12.59	Portsmouth: 50°47'N. 1°05'W. (Hampshire)

Common Gull (*Larus canus*)

Common Gulls have been recovered in the British Isles since the last report, in a greater number in the easterly parts of England. The countries of origin are Finland, Sweden, Norway, Denmark and the Baltic coast of Germany. Details of two birds ringed in other localities are given in full below.

545	pull.	11.6.56	Oriku Island: 58°27'N. 23°42'E. Estonian S.S.R.
	x	0.2.59	Dagenham: 51°33'N. 0°10'E. (Essex)
445	pull.	22.7.59	Kandalaksha: 67°02'N. 32°35'E. U.S.S.R.
	x	12.12.59	Corton: 52°31'N. 1°45'E. (Suffolk)

Black-headed Gull (*Larus ridibundus*)

A large number of foreign-ringed Black-headed Gulls have been recovered during the period and many different countries of origin are represented. They are found in the Baltic Republics, Poland, Germany (Bavaria, Saxony, Mecklenburg and Schleswig-Holstein), Czechoslovakia, Scandinavia, Holland and Belgium.

Kittiwake (*Rissa tridactyla*)

60	pull.	30.6.59	Grand Tas de Pois: 48°16'N. 4°37'W. (Finistère) France
	v	25.8.59	St. Ives: 50°12'N. 5°29'W. (Cornwall)

Razorbill (*Alca torda*)

433	pull.	16.6.59	Cap Fréhel: 48°41'N. 2°19'W. (Côtes-du-Nord) France
	x	16.10.59	near Fareham: 50°49'N. 1°15'W. (Hampshire)

Puffin (*Fratercula arctica*)

	ad.	9.7.56	Lurøy: 66°21'N. 12°50'E. (Nordland) Norway
	x A	6.9.59	Inchkeith: 56°03'N. 3°08'W. Firth of Forth (Fife)

Swallow (*Hirundo rustica*)

7	ad. ♂	9.10.58	Sames: 43°31'N. 1°10'W. (Basses Pyrénées) France
	x	8.9.59	Lowestoft: 52°29'N. 1°46'E. (Suffolk)

Rook (*Corvus frugilegus*)

20	juv.	8.6.58	Shimsk: 58°11'N. 30°44'E. (Novgorod) U.S.S.R.
	+	22.1.59	Luddington: 53°38'N. 0°44'W. (Lincoln)
65	juv.	8.6.58	Shimsk, U.S.S.R.
	x	14.1.59	Sheffield: 53°23'N. 1°29'W. (York)
52	juv.	2.6.59	Kesma: 58°24'N. 37°05'E. (Kalinin) U.S.S.R.
	+	19.11.59	Stambridge: 51°36'N. 0°45'E. (Essex)

BRITISH BIRDS

L.	pull.	28.5.55	Wanneperveen: 52°42'N. 6°08'E. (Overijssel) Holland
213076	×	6.1.56	Grantham: 52°54'N. 0°38'W. (Lincoln)

Jackdaw (*Corvus monedula*)

C.	ad.	26.6.53	Töllöse: 55°39'N. 11°46'E. (Zealand) Denmark
599026	+	31.3.54	Ely: 52°24'N. 0°16'E. (Cambridge)

Blue Tit (*Parus caeruleus*)

P.	f.g.	2.10.59	Cap Gris Nez: 50°52'N. 1°35'E. (Pas-de-Calais) France
16654	×	28.11.59	Gravesend: 51°26'N. 0°22'E. (Kent)

Redwing (*Turdus musicus*)

Rk.	ad.	20.8.58	Kvisker: 63°59'N. 16°27'W. Iceland
710889	×	15.1.59	Nenagh: 52°51'N. 8°12'W. (Tipperary)
Rk.	ad.	1.11.59	Reykjavik: 64°10'N. 22°00'W. Iceland
813047	×	24.12.59	Keelties: 52°11'N. 9°36'W. (Kerry)

Blackbird (*Turdus merula*)

Hki.	♀	20.10.59	Kristinestad: 62°17'N. 21°20'E. Finland
A103096	×	18.11.59	near Robin Hood's Bay: 54°26'N. 0°32'W. (York)
Stav.	pull.	21.5.57	Hetland: 58°57'N. 5°41'E. (Rogaland) Norway
753047	×	16.1.58	Golspie: 57°58'N. 3°58'W. (Sutherland)
Stav.	pull.	14.6.57	Sokndal: 58°20'N. 6°17'E. (Rogaland) Norway
742400	×	22.11.59	Cley: 52°58'N. 1°03'E. (Norfolk)
G.	pull.	22.6.53	Ytterby: 57°51'N. 11°48'E. (Bohuslän) Sweden
B43589	/?/	26.1.58	Taverham: 52°41'N. 1°12'E. (Norfolk)
G.	pull.	29.6.57	Ytterby, Sweden
B58841	/?/	28.2.59	Stockport: 53°24'N. 2°09'W. (Cheshire)
G.	pull.	20.6.57	Skållerud: 58°45'N. 12°25'E. (Dalsland) Sweden
B55396	/?/	winter 1957	Stranraer: 54°54'N. 5°02'W. (Wigtown)
G.	pull.	31.5.58	Magnarp: 56°18'N. 12°50'E. (Skåne) Sweden
B55244	()	13.1.59	Iver: 51°31'N. 0°30'W. (Buckingham)
G.	f.g.	25.8.58	Bankeryd: 57°50'N. 14°07'E. (Småland) Sweden
B55482	/?/	11.1.59	Suffield: 52°50'N. 1°20'E. (Norfolk)
C.	pull.	18.6.53	Birkeröd: 55°50'N. 12°25'E. (Zealand) Denmark
780349	×	13.1.54	near Aberdeen: 57°10'N. 2°04'W.
H.	ad. ♀	19.4.58	Wangeroog: 53°48'N. 7°52'E. E. Frisian Is. Germany
7213469	×	0.2.59	Murthly Castle: 56°32'N. 3°31'W. (Perth)
H.	ad. ♀	4.10.58	Heligoland: 54°11'N. 7°55'E. Germany
7309383	×	0.1.59	Shotley: 51°58'N. 1°16'E. (Suffolk)
L.	pull.	19.5.55	Havelte: 52°46'N. 6°15'E. (Drenthe) Holland
D86576	×	0.11.56	Cahir: 52°23'N. 7°55'W. (Tipperary)
B.	pull.	10.5.56	Schoten: 51°15'N. 4°30'E. (Antwerp) Belgium
5D3678	v ♂	1.11.59	Woldingham: 51°17'N. 0°02'W. (Surrey)
	v	7.1.60	Woldingham
	v	17.1.60	Woldingham

Wheatear (*Oenanthe oenanthe*)

C.	juv.	20.7.58	Ikerasak: 70°30'N. 51°30'W. Greenland
850396	v	8.5.59	Lundy: 51°12'N. 4°40'W. (Devon)

FOREIGN-RINGED RECOVERIES

Redstart (*Phoenicurus phoenicurus*)

ad. ♂	6.5.59	Saltholm: 55°38'N. 12°46'E. Denmark
v	3.9.59	Dungeness: 50°55'N. 0°59'E. (Kent)

Robin (*Erithacus rubecula*)

f.g.	2.10.59	Ventes Ragas: 55°21'N. 21°13'E. Lithuanian S.S.R.
v	13.12.59	Hythe: 51°04'N. 1°06'E. (Kent)
ad.	19.9.59	Signilskär: 60°12'N. 19°22'E. Åland Is., Finland
× (cat)	11.10.59	Dartmouth: 50°21'N. 3°35'W. (Devon)

Waxwing (*Bombicilla garrulus*)

f.g.	8.10.59	Näsby: 65°51'N. 23°08'E. Kalix, Sweden
×	19.11.59	Kirkcaldy: 56°06'N. 3°09'W. (Fife)

is the first foreign-ringed Waxwing to be recovered in the British Isles.

Starling (*Sturnus vulgaris*)

ad.	20.5.57	Darwin Reserve: 58°30'N. 37°30'E. (Rybinsk) U.S.S.R.
+	7.1.59	Wharram: 54°05'N. 0°40'W. (York)
juv.	3.6.58	Darwin Reserve, U.S.S.R.
v	6.11.59	Thurcaston: 52°42'N. 1°09'W. (Leicester)
pull.	0.5.56	Minsk: 53°54'N. 27°34'E. U.S.S.R.
×	31.1.57	Great Witchingham: 52°44'N. 1°08'E. (Norfolk)
pull.	2.6.58	Ristiküla: 58°11'N. 24°47'E. Estonian S.S.R.
+	12.1.59	Potter Heigham: 52°43'N. 1°36'E. (Norfolk)
pull.	27.5.59	Abia: 58°02'N. 24°51'E. Estonian S.S.R.
× (cat)	14.11.59	Sarn: 52°31'N. 3°11'W. (Montgomery)
pull.	5.6.58	Kaunas: 54°54'N. 23°54'E. Lithuanian S.S.R.
+	1.1.59	Stakeford: 55°10'N. 1°35'W. (Northumberland)
pull.	30.5.58	Pori: 61°30'N. 21°45'E. Finland
×	15.2.59	Sileby: 52°44'N. 1°06'W. (Leicester)
pull.	12.5.57	Madla: 58°57'N. 5°40'E. (Rogaland) Norway
×	24.2.58	Dunfermline: 56°05'N. 3°28'W. (Fife)
pull.	31.5.57	Time: 58°43'N. 5°38'E. (Rogaland) Norway
/?/	25.1.58	Lowthorpe: 54°03'N. 0°20'W. (York)
pull.	24.5.57	Time, Norway
×	23.3.58	Penrith: 54°40'N. 2°45'W. (Cumberland)
pull.	30.5.57	Bjerkreim: 58°37'N. 6°00'E. (Rogaland) Norway
×	16.1.58	Keith: 57°34'N. 2°56'W. (Banff)
pull.	25.5.57	Birkeland: 58°21'N. 6°09'E. (Rogaland) Norway
× (wires)	0.2.58	Ramsey: 54°20'N. 4°27'W. Isle of Man
pull.	29.5.57	Vallda: 57°27'N. 12°01'E. (Halland) Sweden
/?/	26.2.58	Letterkenny: 54°57'N. 7°45'W. (Donegal)
pull.	21.5.57	Lye: 57°21'N. 18°30'E. Gotland, Sweden
/?/	8.2.59	Peterborough: 52°34'N. 0°14'W. (Northampton)
pull.	28.6.59	Norberg: 60°04'N. 15°56'E. (Västmanland) Sweden
/?/	10.11.59	Grimsby: 53°35'N. 0°04'W. (Lincoln)
pull.	9.6.58	Ör: 58°39'N. 12°21'E. (Dalsland) Sweden
/?/	27.12.59	Southport: 53°39'N. 3°01'W. (Lancashire)

C.	pull.	30.5.58	Tarm: 55°54'N. 8°32'E. (Jutland) Denmark
702473	× A	26.6.59	Easington: 53°39'N. 0°07'E. (York)
H.	pull.	21.5.54	Nordhorn: 52°27'N. 7°05'E. (Niedersachsen) Germany
7225200	×	22.1.59	Liverpool: 53°25'N. 2°58'W. (Lancashire)
H.	pull.	24.5.58	Grünenplan: 51°58'N. 9°47'E. (Hanover) Germany
7311162	×	25.1.59	Hoath: 51°20'N. 1°10'E. (Kent)
H.	pull.	19.5.59	Nienburg: 52°38'N. 9°13'E. (Hanover) Germany
7256981	×	30.12.59	Rochford: 51°36'N. 0°43'E. (Essex)

Many other Starlings ringed out of the breeding-season were recovered as usual in most parts of Britain in autumn and winter. They had nearly all been trapped originally in Holland, Scandinavia and Germany.

Goldfinch (*Carduelis carduelis*)

Port.	f.g.	22.11.59	Mindelo: 41°19'N. 8°41'W. Portugal
2578C	× (cat)	11.5.60	Oxted: 51°16'N. 0°01'W. (Surrey)
San S.	ad.	1.5.58	Fuenterrabía: 43°21'N. 1°48'W. (Guipúzcoa) Spain
A10877	×	1.6.60	Chapelton: 53°28'N. 1°27'W. (York)

These two records of Goldfinches ringed in the north of the Iberian Peninsula are advanced from 1960 in order that they may be seen in relation to the British ringed birds of the same species in the earlier part of this "Report on bird-ringing for 1959" (page 500). A10877 is described as having been "on migration" when first ringed in May 1958.

Linnet (*Carduelis cannabina*)

L.	pull.	5.6.57	Den Helder: 52°58'N. 4°45'E. Holland
H80033	×	14.2.59	Romford: 51°35'N. 0°11'E. (Essex)

Chaffinch (*Fringilla coelebs*)

Stav.	pull.	15.6.54	Trondheim: 63°26'N. 10°24'E. Norway
930958	v	26.10.54	Loosduinen: 52°04'N. 4°15'E. Holland
	×	10.2.58	Clowne: 53°17'N. 1°16'W. (Derby)
Stav.	pull.	17.6.59	Trysil: 61°30'N. 12°30'E. (Hedmark) Norway
971830	()	11.12.59	St. Ives: 50°12'N. 5°29'W. (Cornwall)
	v	0.2.60	St. Ives
Stav.	♂	12.10.56	Sokndal: 58°20'N. 6°17'E. (Rogaland) Norway
847857	×	18.1.59	Charlton: 51°00'N. 2°08'W. (Wiltshire)
L.	1st W. ♂	10.10.58	Wassenaar: 52°08'N. 4°20'E. Holland
H90846	()	7.12.59	Campbeltown: 55°26'N. 5°36'W. (Argyll)
	v	22.12.59	Campbeltown
L.	1st W. ♂	23.11.53	Leerdam: 51°54'N. 5°06'E. Holland
H20476	×	(29.2.56)	Chalford: 51°44'N. 2°09'W. (Gloucester)
L.	♂	8.11.53	Baarle-Nassau: 51°27'N. 4°57'E. Holland
F67696	×	(23.2.56)	Llantwit Major: 51°24'N. 3°29'W. (Glamorgan)
L.	♀	10.10.55	Baarle-Nassau, Holland
H58072	×	25.2.56	Dalkey: 53°16'N. 6°06'W. (Dublin)
L.	f.g.	21.1.55	Halsteren: 51°32'N. 4°16'E. Holland
H30353	×	26.2.56	Waterford: 52°15'N. 7°07'W.
L.	♂	18.10.58	Breda: 51°35'N. 4°47'E. Holland
A57700	v	8.11.59	Littlebourne: 51°16'N. 1°11'E. (Kent)

Bird observatories in Great Britain and Ireland

ist is arranged alphabetically and is designed to give (i) the name of the warden or director if there is one; (ii) the address from which particulars may be obtained; and (iii) an indication of accommodation charges and travel routes (charges are, of course, liable to alteration). *Stamped envelopes should be enclosed with applications for particulars.*

JEY BIRD AND FIELD OBSERVATORY, Caernarvonshire, N. Wales. *Warden:* W. Arthur. *Write to:* G. C. Lambourne, The Cottage Farm, Ipsley, Redditch, Worcestershire. *Accommodation:* 4/- to 5/- per night; evening meal available at busy periods at 4/6. *Station:* Pwllheli. *Boat from Aberdaron:* 11/- return.

BIRD OBSERVATORY, Holt, Norfolk. *Warden:* R. A. Richardson, Hill Top, Cley, Norfolk, from whom particulars may be obtained. *Accommodation:* cottage or hotel in village. *Station:* Holt (4 miles).

LAND BIRD OBSERVATORY, N. Ireland. *Hon. Director:* J. G. Gray. *Write to:* Wilde, 23 Kingsland Park, Knock, Belfast. *Accommodation:* 2/- per night. *Bus and boat in Belfast:* 10/- return.

GENESS BIRD OBSERVATORY, Romney Marsh, Kent. *Warden:* R. E. Scott. *Write to:* H. A. R. Cawkell, 6 Canute Road, Hastings, Sussex. *Accommodation:* 5/- per night. *Station:* Maid-on-Sea.

ISLE BIRD OBSERVATORY, Shetland. *Warden:* Peter Davis, who will supply a prospectus and arrange bookings. *Accommodation and board:* 15/- to £1 per night. *Station:* Aberdeen; then by steamer to Lerwick or by B.E.A. aeroplane to Sumburgh. *Island boat:* 18s. 6d. return.

ALTAR POINT FIELD RESEARCH STATION AND BIRD OBSERVATORY, near Loughborough, Lincs. *Bookings:* A. E. Smith, Pyewipes, Willoughby, Alford, Lincs. *Research:* K. Cornwallis, Bleasby Grange, Legsby, Market Rasen, Lincs. *Accommodation:* 6/- per night. *Station:* Skegness.

OF MAY BIRD OBSERVATORY AND FIELD STATION, Fife. *General correspondence:* Dr. W. J. Eggeling, Nature Conservancy, 12 Hope Terrace, Edinburgh 9. *Bookings:* Macdonald, Hadley Court, Sidegate, Haddington, East Lothian. *Accommodation:* 5/- per night. *Station:* Pittenweem. *Boat:* 15/- return.

EY BIRD OBSERVATORY, St. Ouen's Nature Reserve, Jersey, C.I. *Write to:* A. le Mar, 6 York Street Chambers, St. Helier, Jersey, C.I. *Accommodation and board:* £7 7s. per week (seaside café, "Pro Tem"). *Travel:* by steamer from Weymouth or Southampton (5s. 6d., 2nd class return) or by B.E.A. aeroplane.

Y FIELD STATION AND OBSERVATORY, via Bideford, Devon. *Warden:* W. B. Ackman. *Write to:* J. Dyke, 8 Rock Avenue, Barnstaple, Devon. *Accommodation:* 5/- per night. *Station:* Bideford. *Boat (M.V. Lundy Gannet):* £2 5s. return; or Campbell Line steamer to Ilfracombe: £1 5s. return.

LAND BIRD OBSERVATORY, Portland Bill, Dorset. *Bookings:* A. J. Bull, The Gallop, Winton, Dorset. *Records:* Dr. J. S. Ash, Game Research Station, Fordingbridge, Hants. *Accommodation:* 5/- per night. *Station:* Weymouth.

T SALTEE BIRD OBSERVATORY, Co. Wexford, Ireland. *Write to:* Major R. F. Sledge, Mount Armstrong, Donadea, Co. Kildare, Ireland. *Accommodation:* 2/6 per night. *Station:* Bridgetown (boat from Fishguard to Rosslare; train from Rosslare to Bridgetown). *Return:* £1 return.

HOLM BIRD OBSERVATORY, Dale, Haverfordwest, Pembs. *Warden:* K. D. Smith. *Write to:* The Warden, Dale Fort Field Centre, Haverfordwest, Pembs. *Accommodation and board:* £6 16s. 6d. per week. *Station:* Haverfordwest. *Car and boat:* £1 return.

N BIRD OBSERVATORY, Kilnsea, Yorks. *Warden:* P. J. Mountford. *Write to:* G. H. Sworth, 144 Gillshill Road, Hull. *Accommodation:* 4/- per night (3/- to Y.N.U. Members). *Stations:* Hull (bus to Kilnsea) or Patrington (taxi or bus).

NEW GROUNDS, Slimbridge, Gloucestershire (Headquarters of the Wildfowl Trust). *Director:* Peter Scott. *Assistant Director (Research):* Dr. G. V. T. Matthews. *Write to:* the Secretary, at address above.

In addition to the above observatories, two representatives from each of which form the Bird Observatories Committee, there are several which have not yet applied for formal recognition. These include: Bradwell (Essex), St. Agnes (Isles of Scilly), Cape Clear Island (Co. Cork), Tory Island (Co. Donegal), Sandwich Bay (Kent), the Calf of Man (I.o.M.) and Walberswick (Suffolk). Applications concerning these stations may be made through the Ringing Officer, Bird-Ringing Committee, c/o British Museum (Natural History), London, S.W.7. Monks' House Bird Observatory (Northumberland) unfortunately has now been closed down.

A brief history of bird-ringing in Great Britain and Ireland

Although from 1890 there had been several enterprises of limited scope, bird-ringing on a large scale in this country began in 1909 with the independent launching of two schemes—one by H. F. Witherby in connection with *British Birds* (rings marked “Witherby High Holborn London”), and the other by A. Landsborough Thomson in Scotland (rings marked “Aberdeen University”). Of these, the first-mentioned developed into the national scheme of today; the other came to an end during the First World War, its promoter afterwards becoming associated with Witherby’s scheme.

In 1937 Witherby transferred the control of his scheme to the British Trust for Ornithology, which appointed a Bird-Ringing Committee to manage it: Miss E. P. Leach, who had latterly assisted Witherby, carried on the work as Honorary Secretary of this Committee. At the same time, the headquarters were moved to the British Museum (Natural History) where the Trustees had agreed to provide accommodation and also to allow the use of the Museum address on rings. *British Birds* continued to support the scheme and to be the chief medium of publication. The Leverhulme Trust made a non-recurrent grant for special projects.

For a long time the scheme was mainly self-supporting, all the ringers paying—as they normally still do—for the rings they used. Its rapid growth after the Second World War, however, eventually made it impossible to maintain the ever-increasing load of headquarters work on a voluntary basis, although some help towards expenses was afforded from the general funds of the Trust. Fortunately, the Nature Conservancy agreed to give financial support, at first on a small scale but from 1954 in an annual amount to cover the salaries of a whole-time Ringing Officer (Robert Spencer) and other staff.

This substantial support and the continuing active co-operation of so many ringers are evidence of the importance attached to the scientific results. A report on progress, with a selected list of recovery records, is published each year in *British Birds*, an extra number of the journal now being entirely devoted to this and related purposes. Analyses of particular sections of the accumulated data are also published from time to time.

British Birds

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to Great Britain and Ireland

By G. J. Harris, J. L. F. Parslow and R. E. Scott
(with one plate)

Studies of less familiar birds: 108—Little Crake

By Kurt Bauer, Otto Koenig and Ilse Makatsch
(with four plates)

Recent reports and news

Reviews Letters

Three
Shillings



November
1960

accompanied by Ringing Supplement

British Birds

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PLATE 59. Northern Waterthrush (*Seiurus noveboracensis*), Isles of Scilly, September-October 1958 (pages 513-518). This small, plump and pipit-like American warbler, olive-brown above and yellowish streaked with brown below, fed on flies on rotting seaweed. Note the yellowish-buff superciliary stripe (photos: R. E. Emmett)



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Northern Waterthrush in the Isles of Scilly: a bird new to Great Britain and Ireland*

By G. J. Harris, J. L. F. Parslow and R. E. Scott

St. Agnes Bird Observatory
(Plate 59)

ON THE MORNING of 30th September 1958, G.J.H. and R.E.S. discovered at Covean, on the eastern side of St. Agnes, Isles of Scilly, a small ground-feeding bird which they identified as a Northern Waterthrush (*Seiurus noveboracensis*). A single-panelled mist-net was erected on the shore and the bird caught with little effort. After examination at the observatory it was photographed in colour and then returned to Covean and released. It remained there until 12th October and during its stay was seen by several other observers including J.L.F.P., R. E. Emmett, B. S. Milne, P. Z. Mackenzie and R. Symons. This is the first record of the species in Great Britain and Ireland; though it has occurred in Europe once before, a female having been trapped on Ushant, France, on 17th September 1955 (Etchécopar 1955, Mayaud 1956).

In the field the first impression was of a small, plump, pipit-like bird, dark olive-brown above with a well-marked yellowish-buff superciliary stripe and yellowish below with heavy, dark brown streaks. In size it was noticeably smaller than Rock Pipits (*Anthus spinoletta*) near-by and its plump appearance was very marked, more so than in the illustration in Peterson (1947). For most of its stay it tended to frequent one corner of a small cove, where rotting seaweed had been piled up at the foot of a tamarisk hedge, but latterly, when the weed had been washed away by high tides, it sometimes resorted to adjacent bulb fields where more seaweed had been spread in readiness for ploughing in as a fertiliser. On the shore it found an abundant food

*We regret that it has not been possible to publish the full details of this occurrence until now, owing to the work involved in assembling the data.—Eds.

supply in the larvae and flies in and around the seaweed. Here it fed rather in the manner of a Pied Wagtail (*Motacilla alba*) with frequent runs, hops and leaps into the air to catch flies, and also regularly bobbed its tail after the fashion of a Common Sandpiper (*Tringa hypoleucos*). In the hand, after it had been extracted from the mist-net, it seemed a much smaller bird than field observations suggested and this was confirmed by measurement. A small snail which was removed from its flank feathers was identified by S. P. Dance at the British Museum (Natural History) as *Vitrina pellucida*. This snail has a wide distribution on both sides of the Atlantic and specimens have been found attached to birds on several occasions (Williamson *et al.* 1959).

DESCRIPTION

Plumage

The whole of the bird's upper-parts were dark olive-brown, except that the lesser wing-coverts were only shaded with olive and the two longest scapulars were lightly tipped with buff. The chief feature of the head was the yellowish-cream superciliary stripe which was straight and extended back about 25 mm. from the nostril; it did not cross over the base of the bill. A dark olive-brown stripe passed through the eye. The ground colour of the under-parts was whitish, heavily suffused with yellowish-buff. The throat was lightly speckled with olive-brown, these spots continuing down the breast and flanks as very heavy streaking; the belly and vent lacked markings. The basal three-quarters of the under tail-coverts were olive-brown, the tips being white; these coverts extended to within 6 mm. of the tip of the tail.

Soft parts

Bill straight and even; upper mandible and tip of lower a very dark horn colour, remainder of lower mandible pearl-pink; gape flesh-pink. Feet and legs dirty flesh-pink; hind claw strongly curved. Eyes dark brown.

Wing-formula and measurements

Third and 4th primaries equal and longest, both emarginated on outer web; 2nd shorter by 1 mm.; 5th, 6th and 7th shorter by 2.5, 7 and 10.5 mm. respectively; 1st primary minute, 8 mm. shorter than longest primary covert. The following measurements were taken:

Wing (chord)	75 mm.	Bill (from skull)	16.5 mm.
Tail	c. 55 mm.	Bill (from feathers)	11.5 mm.
Tarsus	19.5 mm.	Hind claw	6 mm.
Total length approximately 5½ inches			

Age and sex

The bird showed no white tipping to the inner webs of the outer two to four retrices. Lack of this tipping is considered by Eaton (1957) to be characteristic of birds in first-winter plumage. The sexes are alike at all times of the year. In size, females tend to average smaller than males but there is a considerable overlap, within which the measurements of the St. Agnes bird fall. The question of subspecific identification is discussed below.

THE DISTRIBUTION OF THE SPECIES

The Northern Waterthrush is a common and characteristic nesting bird near lakes, rivers and other waters in the northern part of the New World. Its breeding range spans the whole of Canada, Alaska and Newfoundland, and includes the north-eastern United States. In autumn it migrates through the United States, the main passage on the Atlantic coast being in August, and birds winter from Florida south to the tropics (Bent 1953).

Four subspecies have been described. By virtue of its yellowish superciliary stripe and under-parts, it seems probable that the St. Agnes bird belonged to either the nominate race, which occupies most of the eastern part of the breeding range, or the race *uliginosus* which nests in Newfoundland (Burleigh and Peters 1938). However, in a recent detailed study of the races of the Northern Waterthrush, Eaton (*loc. cit.*) considers the species to be monotypic in view of its clinal and rather slight geographical variation, and the taxonomic position of the St. Agnes individual is therefore probably unimportant.

WEATHER CONDITIONS

On St. Agnes the wind had been westerly and strong for some days preceding the bird's arrival. Virtually no migration was recorded and, apart from the Waterthrush, the only fresh arrivals on 30th September were two Lapland Buntings (*Calcarius lapponicus*). The chief feature of the Atlantic synoptic charts at this time was a deep depression which moved slowly eastwards from Labrador to Ireland, giving rise to the westerly winds which were especially strong in the 30 hours before the bird's arrival. Fig. 1 shows the track of the centre of the depression as a continuous line; the dotted line is the trajectory of the air at *sea-level* which reached Scilly at 0900 hours on 30th September (and which, incidentally, would have been the bird's track had it been transported passively down-wind). This trajectory clearly shows that the existing weather conditions gave the bird considerable assistance if it did fly the Atlantic unaided. Beyond this, however, it is impossible to reach any firm conclusions regarding the bird's crossing.

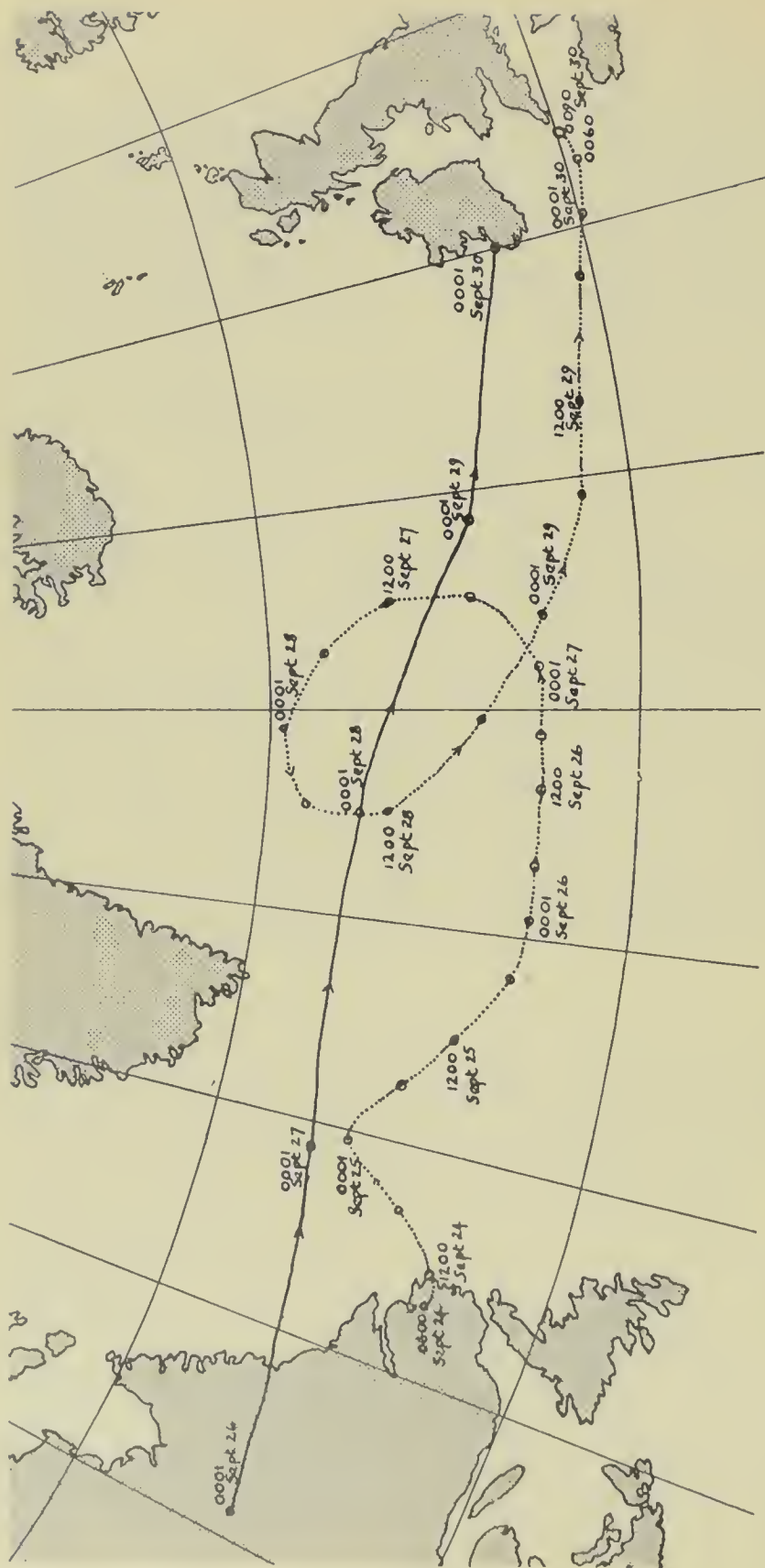


FIG. 1. Atlantic weather preceding the observation of a Northern Waterthrush (*Seiurus noveboracensis*) on St. Agnes, Isles of Scilly, 30th September-12th October 1938. The continuous line shows the track of a depression which moved eastwards from Labrador towards the end of September. The trajectory of the air at sea-level across the Atlantic which reached the Isles of Scilly at 0900 hours on the 30th is shown by the dotted line. The loop is explained by the fact that the air moving more quickly than the centre of the depression became caught up in the cyclonic circulation of the low pressure system.

Baird *et al.* (1959) have shown that during the autumn of 1958 Northern Waterthrushes were more numerous on the eastern sea-board of the United States than in the previous year, but that, in common with other migrants, they were scarce or absent during 26th-28th September when the whole coast was under the influence of a cloud belt and high winds associated with the hurricane "Helene". Drift from the United States coast in this period seems to have been improbable, and in the unlikely event of the bird making the crossing in less than 30 hours or more than four days—necessary if it left later than the evening of the 28th, or earlier than the 26th—we must assume that it started its journey further north, perhaps from Newfoundland. Ship-assisted passage cannot be ruled out. Indeed, if the bird did leave the United States coast before the 26th it must have boarded, and found sufficient food on, an eastward-bound ship to have survived. In this respect it is perhaps not without interest to mention that liners from both New York and Montreal passed St. Agnes the night before the bird was found.

FIELD-CHARACTERISTICS

The Northern Waterthrush is distinctive in appearance and cannot be confused with any European bird. Confusion may, however, be possible with another New World species, the Louisiana Waterthrush (*S. motacilla*), which has not been recorded in Europe, and which has more whitish under-parts and eye-stripe and an unspotted throat (see Hollom 1960). Although actually one of the American warblers (Parulidae), the Northern Waterthrush bears a superficial resemblance to a diminutive Song Thrush (*Turdus philomelos*), while its general behaviour, coloration and size recall a pipit (*Anthus* spp.). In fact, both Rock Pipits on the shore and Robins (*Erithacus rubecula*) in the fields showed aggressive behaviour towards the St. Agnes bird. At all times this individual was extremely tame, frequently approaching to within five or six feet of sitting observers and enabling photographs to be taken down to this range (plate 59). When alarmed it normally flew into the lower part of a dense tamarisk hedge, but otherwise it was seen only on the ground or in the air, when its flight was straight and direct. The uniformly dark upper-parts appeared almost blackish in flight. The heavily striped under-parts, especially the flanks, and the striking eye-stripe were noticeable features on the ground, and the regular bobbing action of the tail quite characteristic. A call-note, frequently uttered, particularly in flight, was a loud explosive *spike*, with some resemblance to that of a Grey Wagtail (*Motacilla cinerea*).

ACKNOWLEDGEMENTS

We are most grateful to Mr. F. E. Lumb and Miss J. M. Oliver of the

Meteorological Office for compiling the trajectories shown in Fig. 1. The map is reproduced by permission, and was prepared for publication by Mrs. R. E. Parslow.

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Studies of less familiar birds

108. Little Crane

By Kurt Bauer

Photographs by Otto Koenig and Ilse Makatsch

(Plates 60-63)

THE IDENTIFICATION OF CRAKES has caused trouble ever since ornithologists turned their attention to live birds. In fact there is possibly no other group, at least in Europe, whose numbers and distribution are shrouded in such uncertainty. Therefore, when the editors obtained some photographs of the Little Crane (*Porzana parva*), they looked for somebody who might have something new to say about this bird and its troublesome relative, Baillon's Crane (*P. pusilla*). They remembered that Neusiedler See, between Austria and Hungary, is one of the few places where both are known to have bred and, because I spent some seven years watching and ringing birds there, they thought I was the expert needed. Unfortunately, my knowledge is considerably less than they had hoped, because of the enormous difficulty of getting to grips with these birds, but the notes which follow may have something to add to the account in *The Handbook*.

Living as I did in a "lake-dwelling" (now burnt down) amidst the enormous reed-beds of Neusiedler See, I certainly had unequalled

opportunity of studying Little Crakes. There this species is one of the commonest rails, normally second only to the Coot (*Fulica atra*), though in some years the Water Rail (*Rallus aquaticus*) outnumbers it as well. On the other hand, the assumption that Baillon's Crake breeds or has bred there is based on very meagre evidence. Apart from a few old specimens obtained outside the breeding season, it did in fact until recently rest solely on some observations made there in 1936 by Otto Koenig, then a hopeful youngster. These observations were later published in a booklet (Koenig 1943) which seems still to be one of the few major contributions to our knowledge of the life history of European rails, though unfortunately, because it was published in a non-ornithological and only locally distributed series, it has remained almost unknown to this day. In this booklet Koenig published the results of his ecological and ethological studies and also a series of photographs which included some of the birds he had identified as Baillon's Crakes. But, as Mr. Koenig has now known for years, these photographs (some of which are reproduced here as plates 61 and 62a) show clearly that the birds were not Baillon's, but juvenile Little Crakes! Subsequent attempts to find Baillon's Crakes at Neusiedler See have had very little success. Odd individuals have been seen on a few occasions between July and September (Bauer, Freundl and Lugitsch 1955), but there was no suggestion of breeding until, on 17th September 1955, my colleague T. Samwald trapped a very young bird which still had some down on it and whose remiges were only partially developed; this juvenile had clearly been bred locally (Bauer 1957). Here the case still rests. We went on searching for Baillon's Crake, but though we trapped some hundred Little Crakes and Spotted Crakes (*P. porzana*) we could not get any further proof of its existence.

It will be clear from the above that I cannot boast any intimate knowledge of Baillon's Crake and the account which follows is primarily concerned with Little Crake alone. However, owing to the problems surrounding the identification of the two species, it may not be totally useless to include something of what I have learnt about Baillon's Crake from our own few observations, from the study of skins and from Continental published sources.

The habitat descriptions given in *The Handbook* need little comment, but it should be stressed that both the Little and Baillon's Crakes are decidedly more aquatic than the Spotted Crake. Whereas the last keeps to the drier, admittedly waterlogged but normally not actually flooded outer margins of the swamps, both the smaller species prefer the inner flooded parts. If we think in terms of an ecological section from wet meadow to open water, with such habitat indicators as Corncrake (*Crex crex*)—Water Rail—Coot, the Spotted Crake should be inserted between the first two and the Little Crake between the

second and third (though considerably overlapping the zonal ranges of both these species, of course). As does *The Handbook*, several German observers have recorded a preference on the part of the Little Crake for stands of mixed vegetation dominated by *Cladium* or *Carex* (sedge), *Typha* (reed-mace), *Sparganium* and others; some have even stated that pure *Phragmites* (reed) is avoided. This may sometimes be true, but it certainly does not hold good everywhere. At Neusiedler See, for instance, the Little Crake is one of the commoner birds of the immense stands of *Phragmites communis* concentrated round the borders of the open water. Plate 60a, in fact, shows a typical Neusiedler See nest in these dense and tall reeds, while plate 62a illustrates another habitat in the same locality, a thick jungle of *Typha latifolia*. By way of contrast and to demonstrate the variation, plates 60b and 63a show much less closed vegetation at a breeding site in Lausitz, Germany. The various plates make it clear how the Little Crake is equally at home running over mud, wading in shallow water, pushing through vegetation or balancing along stems of reed or reed-mace (see especially plate 62a); it also swims and dives readily.

From all the available evidence the habitat of Baillon's Crake seems very similar to that of the Little, though many reports point to a preference for finer, lower and denser vegetation: the most typical places seem to be areas of flooded sedge intermingled with reed-mace. This small difference, however, holds true only for the breeding season. At Neusiedler See even the clear-cut separation between the Spotted Crake and the Little Crake is largely lost in late summer: their zonal ranges then broadly overlap (possibly as a result of the marked lowering of the water-table which occurs regularly at this season) and, if in spring it might have been difficult to locate a spot from which both could be heard "singing", they may now be seen side by side.

The following pieces of information are worth adding to the biological data in *The Handbook*. In central Europe the Little Crake does not arrive until April, even then rarely before the middle of the month, and all the first ones to appear are males; from such records as are available Baillon's Crake seems to come at about the same time. Most Little Crakes leave in August and September, with only stragglers in October. The territorial "song" of the Little Crake is heard from about mid-May (rarely earlier) to the end of June (or early July) and full clutches are found from the first ten days of May to the first ten days of July. There appear to be second broods quite regularly, but exact proof of this is difficult to obtain. In addition, according to Koenig's observations, the nest is built solely by the male (!); incubation starts with the second egg and lasts 21 days; though both sexes incubate, the female does so alone after the hatching of the first young, which the male then looks after; and when the chicks have all left

the nest they are guided by both adults and may even split into two groups, one with each parent, for short periods. Koenig also described a remarkable sun-bathing posture for this species (and for other crakes and rails, too): in this the wings are lifted in front, partially spread and crossed over the back. One of Mrs. Makatsch's photographs (plate 63b) illustrates this quite well, while another (plate 63c) shows the same bird after bathing (which all crakes do freely).

Only trifling comments have to be made on the late H. F. Witherby's exact and detailed plumage descriptions in *The Handbook*. However, it must be pointed out that a white edge to the first primary is *not* a good character for the determination of *pusilla*, because in both species there quite frequently occur specimens with partially white leading edges to the wings and both show marked individual variation in this (Rokitansky 1953). As *The Handbook* mentions, the juvenile *parva* is more marked with white above than the adult (*cf.* plates 61 and 62a with 62b and 63b), but in contradiction to what is written in that work I find that the juvenile *pusilla* has definitely less white spotting on the back than the adult: as a result there is something of an overlap between the juveniles in this respect, with no question of the quite noticeable difference in the amount of white spotting that is to be seen in the adults of the two species. Plate 60 compares the adult male and female Little Crake, and plate 62 the adult male and the juvenile (showing the much more extensive barring on the under-parts of the latter).

As a result of handling birds for weighing and ringing, we have gained a certain amount of information on the colours of the soft parts of the Little Crake. In juveniles the bill is a grey-tinged yellowish-green with a somewhat darker greyish-green upper edge and a variable blackish tip that is sometimes much less marked than in the cases of the birds in plates 61 and 62a; there is no sign of the orange-red base to the upper mandible that this species has when adult, except that some individuals show a very slight flesh-coloured tinge which can be seen only on close inspection. Owing to its generally greyish tinge the bill is noticeably darker than the adult's (*cf.* plates 61 and 62a with 60 and 62b). The legs and feet are very variable and range from a dirty pale flesh colour or greyish to brownish or yellowish-green. The iris is normally a moss-green with a ring of faint rusty points or some fine rusty clouding, though in one individual it was a warm brown. There was no noteworthy difference in the colours of the soft parts of the only young *pusilla* we handled at Neusiedler See; the bill was horn-coloured and thus diverged somewhat, but since this was the youngest of all the small crakes we examined this may merely have been connected with age.

Coming now to field identification, both the small crakes are quite easily distinguished from the Spotted. In the first place, *porzana*

looks (and is) considerably heavier, more stockily built and rather rounder-bodied than the nearly always very sleek-looking Little and Baillon's. Furthermore, its uniform buff under tail-coverts (quite easily visible because it frequently cocks its tail) are markedly different from the heavily barred black-and-white ones in the smaller species. When seen in a good light, and not just rushing into cover, Little and Baillon's Crakes are also not difficult to separate from each other. While the former is a pale olive-brown above, Baillon's has a more reddish or chestnut tinge: the difference is quite marked and of about the same order (even if not of exactly the same tone) as between the Sedge Warbler (*Acrocephalus schoenobaenus*) and the Moustached Warbler (*Luscinola melanopogon*). Unfortunately in all the editions of the *Field Guide* that I have seen this difference is reversed, but plate 143 in *The Handbook* depicts it quite well if only the two right-hand Little Crakes are considered (the one on the left is more rufous than any I have ever seen, either alive or as a skin). As the suggested comparison with the two warblers should indicate, it is a distinction to be used carefully, but nevertheless it is marked enough to be appreciated in the field without any direct comparison, provided there is good light. Furthermore, the pale markings on the upper-parts are quite different in the two species—indistinct and somewhat obliterated, roundish or longish flecks in *parva*, but sharp-cut and even partly blackish-bordered, irregular white scratches in *pusilla*. The markings on the upper-parts of Baillon's Crake are thus not only more numerous, but look much more distinct—even in juveniles where, as already stated, the difference in the amount of markings is only slight or even non-existent. This difference in pattern is well borne out in the few photographs that have been published of the western race of Baillon's Crake (*P. pusilla intermedia*) (see Noll-Tobler 1924, Koridon 1959 and Voous 1960) and it is even clearly shown in a photograph of the eastern race (*P. p. pusilla*) which in its paler olive-brown ground-colour resembles *P. parva* rather than *P. p. intermedia* (Bates and Lowther 1952).

As will have been realised from the descriptions of the juveniles already given, colours of legs and bills are helpful only in adults and even then should not be relied upon except in a good light. Even when the light is bad, however, the different character of the white markings is still useful and may even be seen when birds are flitting away between reed-stems. The barring on the bellies of the juveniles, normally shown as quite different in textbook illustrations, can be used only as an additional mark. It is right that in the young Baillon's Crake the barred area is generally more extensive, but individual variation in this respect is quite considerable in both species. Some skins of juvenile Baillon's Crakes are completely unmarked on the breast and have hardly any more barring on the belly than the normal

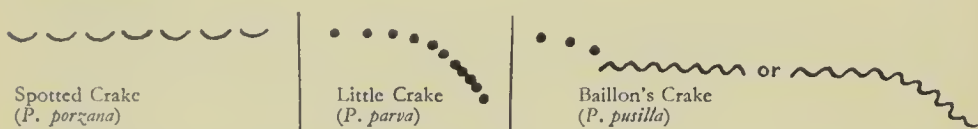
juvenile *parva*. Similarly, some juveniles of the latter show indications of barring even on the breast (plates 61 and 62a) and this was one of the things that misled Koenig. Therefore strongly barred and spotted juvenile Little Crakes are very easily confused with juvenile Baillon's since both apparently have the same bill and leg coloration.

The greatest certainty of identification in such circumstances is offered by the very different tips to the wings. In the Little Crake the longest primary is markedly longer than are the long tertiaries, while in Baillon's this difference is extremely small (about 10 mm. or less). The wing-tip of *parva* is thus much longer and more pointed (plates 61, 62a and 63c) and this can often be seen in the field in conditions which make other characters more or less useless.

Finally, I should like to turn to the question of voice. In the German literature there are lengthy discussions of the noises produced by crakes and rails, but unfortunately nobody has as yet produced a clear and authoritative analysis for either Little or Baillon's, such as Feindt (1948) did for the Water Rail, and no useful picture can be drawn from the numerous written statements. Further, although lacking satisfactory personal knowledge of the voice of Baillon's Crake, I venture to state from my knowledge of *parva* that some authors have even described the wrong species. The question whether a particular call belongs to the Water Rail or to the Little Crake has more than once been discussed in print, but curiously no one seems to have bothered about the vocal separation of the latter and Baillon's. Some observers have stated that they heard this or that uttering from this or that species, without giving us any hint at all of the criteria they used in identification. And, if we further take into account that most of these descriptions relate to noises heard during the periods of incubation and fledging, and not at the times of territory establishment and display, it may well be best to disregard them all for the present. The specific identification of many of the calls therefore remains to be established. The "songs" of these three crakes, however, seem to be as different as we might expect them to be.

That of the Spotted Crake, rendered in *The Handbook* as *b'wet*, *hooid* or *quit*, is by far the most typical and often heard utterance of that species. As the different renderings show, it is impossible to put it into letters. It is a quite toneless sound, strongly recalling (to me at least) a short and sharp stroke of a lash cutting through the air, and it is usually repeated at regular intervals for long periods. The song of the Little Crake is very different—a series of relatively loud (and much more vocal) notes, which starts slowly with each call quite separate and then grows faster from note to note, at the same time falling rapidly in tone. The single note may be quite variable—from loud and clear to subdued and somewhat ventriloquial, depending on

distance and position of bird and density of cover—and thus it is with some justification that it has been compared to sounds as unlike as the falling of thick droplets on a quiet water-surface and the distant barking of a small dog; it has been rendered variously from *boo* to *tong* in written descriptions. Within the strophe, however, there is remarkably little variation and that only in the number of notes. Only once have I heard from a Baillon's Crake what I take to be the counterpart of this song. That was a series of two to four similar notes followed by a short but distinct trill: it was as if most of the notes of a Little Crake had been suddenly hurried up after a quite normal start. Dr. F. Neubahr, who was well acquainted with Baillon's Crake during his youth in Poland, tells me that this is the regular song of this species. Graphically the songs of the three birds might be represented as follows:



Things have been complicated, however, by the fact that some authors have published accounts of songs from supposed Little Crakes which fit the last description much better. Since I never heard anything like this from any of the Little Crakes at Neusiedler See, I suggest that there may sometimes have been confusion with either one of the warning(?)-calls (*kirrook* and variants, somewhat like those of a Moorhen, *Gallinula chloropus*) or the angry purring of aggressive(?) Little Crakes, or misidentification of the species. But to disentangle this confusion will need more information and a thorough comparative study.

In conclusion, I wish to thank Mr. I. J. Ferguson-Lees for the translation of my ugly English into a readable text.

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Reviews

St. Kilda Summer. By Kenneth Williamson and J. Morton Boyd. Hutchinson, London, 1960. 224 pages; with photographs, drawings and maps. 25s.

For 27 years after its inhabitants had been evacuated at their own request, St. Kilda was visited only infrequently and for short periods by naturalists. Then in 1957 the R.A.F. landed a task force to establish a radar station, and the authors, two experienced island enthusiasts, went with it, on behalf of the Nature Conservancy and the National Trust for Scotland, to ensure that the operations caused no damage to the remarkable wild life of this magnificent group of islands. The ready co-operation of the Service authorities made their work far from onerous and allowed them time to carry out a number of valuable studies, many of which were more detailed and complete than anything that had previously been possible.

The authors have also drawn on their work and experiences on shorter visits before and after the summer of 1957. Thus the careful survey of the entire coastline of the archipelago to count the Kittiwake and Guillemot colonies was actually carried out in 1959. The full details of that survey were recently published in this journal (*Brit. Birds*, 53: 252-264), but it is worth recalling that over 7,500 pairs of Kittiwakes and nearly 14,000 pairs of Guillemots were estimated.

Yet these species form only part of the teeming sea-bird populations of St. Kilda. Both are outnumbered by the Fulmar, one of four species of petrel breeding abundantly there; by the Gannet, of which a provisional total of over 40,000 in 1959 on Boreray and its adjoining stacks constitutes easily the largest colony in the world; and, above all, by the Puffin, whose huge numbers no one has yet succeeded in counting. The Puffins there have so far escaped the menace of rats, the cause of such catastrophic decline at colonies in other parts of Britain, and rigorous precautions were taken during the operations to prevent the accidental introduction of these rodents. Gulls are, however, increasing and may in time prove a serious danger to the Puffins.

The Puffin colonies also provide the richest territories for the special St. Kilda subspecies of Wren, a dawn census of which gave a total of 117 singing males on Hirta and an estimate of not less than 230 pairs for the whole archipelago. This is considerably more than previous surveys had suggested and this small bird, once protected by a special Act of Parliament, seems now to be in no danger. Another study was of the Snipe, whose population in 1957 appeared to be at a record level; it is suggested that the islands have been colonised in recent years by

the migratory Faeroe-Iceland form *faeroensis*, with its preference for a drier habitat.

The authors were able to devote special attention to migration, adding 17 species in 1957 alone to the St. Kilda list, which now totals 157. They found, as they expected, that this group of islands, lying as it does to the west of the British mainland, misses the big falls of drift migrants which are a feature of Fair Isle and other places on the eastern side. There was a strong south-bound migration from Greenland and Iceland in autumn, but the return movement in spring was slight, suggesting the use of another route. Though they saw such rarities as Red-headed Bunting, Short-toed Lark, Grey-headed Wagtail and a Bean Goose which became tame enough to feed within a few yards of the bulldozers, it now seems clear that Eagle Clarke's exciting autumn visit in 1910, with its several uncommon vagrants from northern and eastern Europe, was quite exceptional.

The authors did not confine their interests just to the birds of this island group. There are valuable chapters on the Soay sheep and the St. Kilda Field Mouse (another island subspecies, which has thrived since the evacuation and colonised the deserted village, once the headquarters of the now extinct St. Kilda House Mouse), on the seals and sharks, and on some fascinating archaeological researches into the remains of the medieval village and the puzzling stone structures of Gleann Mor. Complete with a generous bibliography, this book provides a full and attractive guide to a unique island group. S.C.

Identification for Ringers No. 1: The Genera *Locustella*, *Luscinia*, *Acrocephalus* and *Hippolais*. By Kenneth Williamson. British Trust for Ornithology, Oxford, 1960. 56 pages; four plates. 3s. 6d.

Since the war we have seen a humane revolution in the study of migrant birds, so that the Heligoland trap and now the mist-net have largely replaced the collector's gun. The capture of rare and difficult forms, until recently almost the prerogative of the observatory worker, is now within the province of every mist-netter. More and more ringers have undertaken the responsibility of accurately identifying, ageing and sexing the living bird. Field taxonomy has become a respectable pursuit. For these reasons there is a great need for aids to identification which sift the relevant information from the mass of detailed description in the reference-books, bring it up to date and present it concisely in a more accessible form.

In *Identification for Ringers No. 1*, the Migration Research Officer of the B.T.O. has given us the first of a series of pocket guides which will go far to meet this demand. He has not only sifted the literature,

but has gone back to the museums and re-examined the basic material. He deals with four warbler genera—*Locustella* (grasshopper warblers), *Luscinola* (Moustached), *Acrocephalus* (reed warblers) and *Hippolais* (Icterine and allies)—that are “fraught with potential headaches” for the field-worker, and he administers a palliative, if not a cure, for nearly all of them.

The author recognises 26 species in these genera. For each of them, with their attendant races, we find a general plumage-description, often with a reference to the field-characters, followed by sections on ageing, colours of soft parts, measurements, weight (if available), wing-formula, moult (if known) and distribution. The text is well-studded with cautions against the pitfalls that may beset us, and we are clearly informed of the aspects that require further study. The statements on moult are particularly valuable in view of its importance in ageing, and the author finds himself in disagreement with *The Handbook* over the timing of the complete post-nuptial change in such relatively common species as the Grasshopper, Sedge and Icterine. He stresses the great need for more field-work on moult (though doubtless some of the gaps could be effectively closed by the examination of collections overseas).

It is refreshing to meet a systematist who has parted company with the “ten measured” school, and shows a proper appreciation of statistical requirements. The samples taken, usually over thirty of each race, and often many more, are tabulated in an appendix prepared by Timothy Bagenal, with the mean, standard deviation, observed and theoretical ranges for each of the four basic measurements.

The work is illustrated by four excellent photographs from Eric Hosking and C. C. Doncaster, and the cover attractively designed by Robert Gillmor. Every serious ringer needs a copy. P.D.

Letters

“Kestrel pellets at a winter roost”

Sirs,—I read with interest the paper by T. A. W. Davis on his examination of pellets of Kestrels (*Falco tinnunculus*) at winter roosts in Pembrokeshire (*Brit. Birds*, 53: 281-284). May I, however, make one small correction concerning his references to O. Uttendörfer's book *Neue Ergebnisse über die Ernährung der Greifvögel und Eulen* (1952)? It is not the Long-tailed Field Mouse (*Apodemus sylvaticus*) which is there given as forming 80% of the Kestrel's food on the Continent, but the vole *Microtus arvalis*. The German name for this animal is “Feldmaus” and under this heading on pages 168-169 of his book Uttendörfer says, “Beim Turmfalken ist sie in den Gewöllen nicht

zählbar, nach Rörigs Magenuntersuchungen macht ihr Anteil an der Gesamtnahrungsmenge über 80% aus." DIETRICH FIUCZYNSKI

Sirs,—A number of the pellets of Kestrels (*Falco tinnunculus*) examined by T. A. W. Davis (*Brit. Birds*, 53: 281-284) were found to consist mainly of earth, but he made no suggestion to account for this peculiar composition. Here in Co. Dublin I have on more than one occasion seen a Kestrel using a convenient perch from which to drop down and pick up earthworms (*Lumbricus* etc.) uncovered by the plough; these are taken singly and carried in the claws back to the perch to be eaten. I suggest, therefore, that the earth in the pellets found by Mr. Davis came from the alimentary tracts of worms eaten by the birds and that their bodies had been completely digested. The time of year when the majority of the pellets containing earth were found (15th February-29th March) would coincide with the period of spring ploughing and the consequent availability of worms in large numbers. F. W. Fox

[We have shown these two letters to Mr. Davis and his reply is given below.—Eds.]

Sirs,—I am grateful to Mr. Dietrich Fiuczynski for pointing out my error in taking "Feldmaus" to be the Long-tailed Field Mouse (*Apodemus sylvaticus*) whereas it is really *Microtus arvalis*, the Continental counterpart of the Field Vole (*M. agrestis*). The principal prey of the Kestrel (*Falco tinnunculus*) in both Britain and much of the rest of Europe is evidently the common vole of the country.

I agree with Mr. F. W. Fox that predation on worms is probably the cause of earth in pellets, at least in the majority of cases, but I did not have any of the earthy Kestrel pellets I collected in the 1958-59 winter examined microscopically, and without this I did not consider there was evidence to justify publishing such an explanation, even as a suggestion. I have since found three Buzzard (*Buteo buteo*) pellets with a high proportion of waste and earthy matter, and I am indebted to Mr. Colin Matheson for accepting them for examination at the National Museum of Wales, Cardiff, and to Mr. Lionel Cowley for reporting on them. Of two found in April 1960, one was without recognisable prey and the other contained elytra of beetles (*Elater* sp.), fur, pieces of feather and part of a mandible of (very probably) a Song Thrush (*Turdus philomelos*). The third pellet, collected on 1st July, consisted of some vegetable matter and the remains of numerous lepidopterous larvae. No earthworm chitae were found in any of the three pellets.

T. A. W. DAVIS

The displays of the Rose-breasted Grosbeak

Sirs,—In my notes on the Rose-breasted Grosbeak (*Phenicticus ludovicianus*) (*Brit. Birds*, 53: 150-152) I alleged that this species seemed



PLATE 60. Above, female Little Crake (*Porzana parva*) nesting in dense reeds, Austria (photo: Otto Koenig). Below, male in open, Germany (photo: Ilse Makatsch). Both are olive-brown above with green legs and red-based green bill, but below she is buff with a whitish throat and he slate with just a light chin (pages 518-524)





PLATE 61. Young Little Crakes (*Porzana parva*), Austria, more spotted above and barred below, their greenish bills grey-tinged and blackish-tipped and looking darker than the adult's, their legs greenish or brown or even greyish-flesh as in Baillon's (page 521). But see the long pointed wing (page 523) (photos: Otto Koenig)





PLATE 62. Above, juvenile Little Crake (*Porzana parva*) in reed-mace jungle, Austria, showing how this aquatic species is as at home on bridges of broken stems as on mud or in water (photo: Otto Koenig). Below, male, Germany, revealing the indistinct roundish flecks of white on the mantle (page 522) (photo: Ilse Makatsch)





PLATE 63. Male Little Crane (*Porzana parva*), Germany. Above, note the diminutive size (smaller than Starling); the nest and 5 eggs (4-11 may be laid) were hidden in the left-hand tuft—quite an open site (cf. plates 60a, 62a). Right, sun-bathing posture with the wings lifted in front, partially spread and crossed over the back. Below, after bathing (which crakes do freely) (photos: Ilse Makatsch)



to have no striking displays except for a song-flight. Unfortunately, I had overlooked the description by H. R. Ivor (*Wilson Bull.*, 56: 91-104) of a spectacular courtship display performed by his captive birds. I am grateful to Rev. E. A. Armstrong for pointing out this mistake, for which I apologise.

I. C. T. NISBET

Recent reports and news

By I. J. Ferguson-Lees and Kenneth Williamson

The items here are largely unchecked reports, and must not be regarded as authenticated records. They are selected, on the present writers' judgment alone, from sources generally found to be reliable. Observers' names are usually omitted for reasons of space and in case a report is subsequently rejected, and none of the items will be mentioned in our annual Index. Readers are asked to submit anything of interest as quickly as possible.

This summary, which is based on the observations of over a thousand watchers, is mainly concerned with the six hectic weeks from mid-September to late October. However, it also overlaps with the previous one (pp. 454-456) in that it includes a number of early September and even late August reports which were received too late for inclusion then. For the most part we are not repeating observations already mentioned and the two summaries should therefore be read in conjunction. This was a most interesting period with a continued spectacular passage of waders, generally low falls of night migrant Passerines except during 16th-18th September and around the turn of the month, and a thorough sprinkling of rarities including a further scattering of American birds. But completely dominating the period were remarkable and apparently quite unprecedented influxes of two wading birds.

PHALAROPES IN ABUNDANCE

In October 1959 a flock of 350 Grey Phalaropes (*Pbalaropus fulicarius*) was recorded off the Isles of Scilly (*Brit. Birds*, 53: 403). Such a gathering had not apparently been recorded previously in the British Isles, but it has now been completely overshadowed by this year's invasion, during the course of which the 1959 record was equalled or passed at no less than six different places and there were at least seven other observations of over a hundred. Small numbers of Red-necked Phalaropes (*Pb. lobatus*) were clearly identified with the Greys and one large gathering was reported as Red-necked. However, in view of the possibility of confusion and because a number of parties out to sea could not be specifically identified anyway, we have lumped all the reports together as "phalaropes" for the purposes of this summary.

Apart from a couple of quite unconnected records on the east coast, the first phalaropes were noted in Cornwall where two and one were seen at Gurnard's Head and St. Ives on 4th and 5th September respectively, to be followed a week later by eight and twelve on the sea near St. Ives on the 12th. Then the deluge began. On the 13th observers returning from St. Agnes (Isles of Scilly) saw a total of at least 110 between St. Mary's and the Wolf Rock. On the 14th, in addition to five at Newlyn (Cornwall), there were at least 30 off Cape Clear Island (Co. Cork) and 27 there next day. Now St. Agnes came on the scene with a vengeance. Only one was there on the 14th and only about six on the 16th, but on the day between, the 15th, huge numbers appeared just off the island: a minimum figure of 1,000 was put down by the observers, but the birds were all over the sea in parties of 20-50 and extended beyond telescope range, so that there could easily have been several times that total.

Also on the 15th smaller numbers were noted in other areas and foretold things to come. That day there were two at sea off Lundy (Devon), six on the Glamorgan coast and two at Bardsey (Caernarvonshire), three at Portland (Dorset) and two as far inland and as far north as Burton Meadows near Nottingham (one of which stayed until the 17th). On the 16th one was seen at Portland, there was a total of about 80 between Scilly and the Cornish mainland, and 97 were counted in 6½ hours at St. Ives, 48 of them in one party and all flying west. The 17th saw a much wider scattering of reports. This was doubtless partly because it was a Saturday, though it is significant that at Cape Clear Island, where at least 120 were now seen and there were possibly two or three hundred, none had been noted the previous day. The other observations on the 17th included about 50 and about 40 at Newlyn and Mount's Bay (Cornwall) respectively, and smaller numbers as far north as Glamorgan and as far east as Dorset. On the 18th Skokholm (Pembrokeshire) reported a total of 17 and there was one as far east as Weir Wood Reservoir (Sussex), but otherwise on that day and the 19th the numbers were less than those already reported and the distribution of counties was similar. Then on the 20th at least 320, possibly 500, were recorded off Cape Clear Island where numbers on the two days before and the two days after did not exceed 40. In most areas this was the end of the first peak. Small numbers continued to be reported in Cornwall, Devon, Dorset, Somerset and Pembrokeshire almost to the end of the month and odd ones got as far as, for example, Lytham St. Annes (Lancashire) on the 24th and 25th and Frodsham (Cheshire) on the 22nd (the latter a Red-necked), but the only really significant observations in the last part of September came from the Smalls Light, some 17 miles west of Skokholm. There 14 on the 22nd were followed by 53 on the 23rd, 18 on the 25th, 21 on the 27th and 227 on the 29th.

The generally small numbers in the last ten days of September proved to be only a lull and in early October great flocks were again recorded, the centre of activity now being from the Isles of Scilly to Dorset. There were several on Scilly shores on 1st October and then on the 2nd "hundreds" were seen streaming westwards close to the coast of St. Mary's: over 500 passed one point in one hour in the morning. That same day there were 37 between Beesands and Slapton (Devon) and among several reports of smaller parties was another single bird up in Nottinghamshire, at Clumber Lake. From this day, in fact, until at least the middle of October phalaropes were reported regularly at most of the continually watched points in south-west England. At Portland, for example, numbers seen in the first 16 days of October varied from two on the 14th to 115 on the 8th and included 46 on the 3rd, 58 on the 5th, 43 on the 8th, 36 on the 10th and 61 on the 15th. Around 5th October there were anything up to 200 not far away along the shore of West Bay and still at least 27 between there and Burton Bradstock on the 13th, while near-by at Lodmoor numbers rose from about 12 on the 7th to at least 30 on the 9th and at least 60 on the 14th, followed by a drop to 38 on the 15th. Returning to Cornish waters again, we find that though phalaropes were seen daily at St. Agnes at this time, the maximum on any one day was only 34, but there were several hundred between Scilly and Land's End on the 7th, mostly flying south-west; and on the 13th, when there were two small rafts of about 30 each near St. Mary's, there were over 300 just south of Land's End. Then on the 16th a concentration of somewhere between 500 and 1,000 was noted on calm sea at St. Ives. Meanwhile, Devon was not going to be left out of the picture and another of these staggering gatherings appeared off Torquay on the 5th, this one involving at least 700 birds; on the same day 20 were seen at Budleigh Salterton and on the 9th there were 108 at Dawlish Warren and 41 in small parties travelling east in one hour at Sidmouth. These, of course, are only the peak numbers.

So much for Cornwall, Devon and Dorset, the counties where the invasion was most striking in the first half of October. The whole influx was remarkably

localised throughout the period and there were not many more records outside the south-west in October than there had been in September. However, during 3rd-5th October small numbers (maximum 30 on the 3rd, when there was also another at Bardsey) were again noted at the Smalls Light west of Skokholm and in the second week of the month Hampshire and Sussex came more into the picture. In Hampshire phalaropes were reported from at least eight or nine localities from Bournemouth (at least 20 in one small area on the 9th) to Langstone Harbour and birds were also noted at St. Catherine's Point (Isle of Wight). At Selsey Bill (Sussex) eight on the 8th were followed by lesser numbers daily to at least the 15th. On the other hand, there were very few reports away from the south coast and the southern part of the Irish Sea and none at all from Kent at this time. Even in the Channel Islands the numbers were small though still unusual—at Jersey, ten on 9th October and then four from the 19th to 22nd (with six on the 21st); at Guernsey, 12 on 13th October. Away from southern coasts the stragglers during October were confined to the merest handful of odd birds, at Rye Meads (Hertfordshire) from the 4th to at least the 9th, at Abberton Reservoir (Essex) from the 7th to at least the 10th, at Queen Mary Reservoir (Middlesex) on the 12th, at Chew Valley Reservoir (Somerset) on the 15th (two) and at Hamilton (Lanarkshire) about the 16th.

It is very interesting to total the number of phalaropes reported to us between mid-September and mid-October. The figure is approximately 7,250 and, although it should not be taken too literally since it does not allow for duplications in the moving flocks and since there are doubtless many other records which have not yet been sent in, it does give a general indication of the size of this remarkable influx, particularly if one compares it with the totals of phalaropes reported in 1958, 1957 and 1950, three years in which the observations were sufficiently numerous to attract general attention. In 1957 just over 300 were reported (*Brit. Birds*, 52: 33-42) and in 1950 and 1958 the totals were only about 100 (44: 247-250; and 53: 369-378)!

AN INVASION OF LITTLE STINTS

Just as the Curlew Sandpiper (*Calidris testacea*) was quite the outstanding northern wader on passage in the autumn of 1959 (*Brit. Birds*, 52: 438), so it was the Little Stint (*C. minuta*) this year, the difference being that the numbers of Little Stints were far greater and in many areas quite unprecedented. We have already referred to the fact of its being a good year for northern waders in general. Wood Sandpipers (*Tringa glareola*) rather fell away towards the end of August, but this is usual. Ruffs (*Philomachus pugnax*) and especially Spotted Redshanks (*T. erythropus*) and Greenshanks (*T. nebularia*) continued high for much of September and there were some sizeable influxes of Curlew Sandpipers in the early part of that month and again in the third and fourth weeks. The first hint that it might be an exceptional year for Little Stints was when at least 40 appeared at Cley (Norfolk) on 3rd September, although there had been smaller numbers in other coastal areas during the previous month. Then in the second week of September small increases were generally noted, not only on the east coast but in the west and south-west as well: on the 11th, for example, there were seven at Shotton Pools (Flintshire) and an increase at Frodsham (Cheshire) after a few earlier in the month, and on the 14th 11 were reported from the Exe Estuary (Devon) after only odd ones previously. The real invasion, however, took place in the middle of the month, associated with a period of moderately heavy falls of Passerines and the arrival of a number of larger species on the east coast (see other sections below).

On 17th September and more particularly the 18th exceptional numbers appeared all along the east coast from as far north as Fair Isle, Morayshire and Aberdeen down to Kent, extending far inland to Midland counties like Nottingham, Leicester and Northampton. For example, at Eye Brook Reservoir (Leicestershire) there

were some 25 on the 18th, increasing to 40-50 or possibly even 75 later in the day; there were still 61 there on the 19th and 29 on the 21st, the numbers then dropping away towards the end of the month. At Pitsford (Northamptonshire) they rose to at least 20 on the 19th and 31 on the 21st; and another big inland gathering involved 45 at Hanningfield Reservoir (Essex) on the 18th, when there were also 36 at Winterset Reservoir (Yorkshire). Coastal flocks were, of course, even larger and at Findhorn Bay (Morayshire) there were 106 on 18th and 19th September and high numbers still on the 21st (there had been one there on the 14th!). Other big concentrations at this time included an estimated total of over 200 at Teesmouth (Co. Durham) and at least 70 at Tursdale (Co. Durham), both on the 17th; and several other places from there south to Kent reported flocks of over 30. On Fair Isle, where the species was seen almost daily from early September to 5th October, numbers rose to seven on 15th September and at least 17 on the 17th.

Some parties reached the south coast on the 18th, on which day there were 30 at Thorney Island (Sussex), and 14 and at least 16 at Pennington and Farlington Marshes respectively (both Hampshire), and there was then also a new influx in Cheshire and Lancashire. However, in both these areas and in the south-west the peak was generally reached between two and seven days later. There were about 70 at the Midrips (Sussex/Kent) on the 25th and about 55 next day, after only 22 on the 19th. At Shotton Pools (Flintshire) there was a total of at least 250-300 on the 22nd, while on the same day there were no less than 311 at Frodsham (Cheshire), about 300 still being present there on the 24th. On the Dumbles at Slimbridge (Gloucestershire), however, there were 52 as early as the 20th, after 22 on the 19th; the numbers dropped to 40 on the 26th and 14 by the 28th. At Chew Valley Reservoir (Somerset) 12 on the 18th rose to at least 25 on the 23rd and on Berrow Beach (also Somerset) 54 were counted on the 26th.

At this time, too, and in early October less spectacular but still unusual numbers were noted in the Irish Sea area. There was a good passage in Anglesey and two were seen on Bardsey (Caernarvonshire) on 18th September, while at Skokholm (Pembrokeshire), where the species has rarely been recorded, there were four on the 17th, two on the 18th and one on the 19th and 20th. Others appeared in Glamorgan, Cornwall and Cardigan. In southern Wales and south-west England there seems to have been a second peak, more marked than anywhere else, at the turn of the month when four out of five on Skokholm were trapped. In Cardigan the maximum number of seven was reached on 4th October and, further south, in Gloucestershire the total at the Dumbles rose again to 61 on the 2nd before dropping to 30 on the 3rd and smaller numbers in the next few days. In Somerset the count on Berrow Beach slumped to 21 on 29th September, then climbed rapidly to 69 on 1st October and 89 on the 2nd. In Devon there were at least 21 on the Exe Estuary on 1st October and at least 40 on the 2nd, and on the 6th 25 or more were noted at Westward Ho! This second peak in the south-west may have been the result of a drainage of the stragglers from the rest of the country. In Flintshire there had still been as many as 71 at Shotton on the last day of September. However, small numbers remained in many parts of the country during the first week of October and in some cases the second week as well. Apart from coastal observations in such counties as East Lothian, Northumberland, Co. Durham, Yorkshire, Lincolnshire and more especially further south, there were October reports from inland in Yorkshire, Warwickshire, Essex (still four at Abberton on the 12th), Hertfordshire and Middlesex (still eight at Perry Oaks on the 9th). Along the south coast, too, October birds were noted in Hampshire (still 17 at Langstone Harbour on the 9th) and Dorset (still at least eight at Lodmoor on the 14th), as well as Devon and Cornwall. Towards the end of October there was a further scattering of records but we must leave that until our next summary.

To give the very roughest of ideas of the size of the influx it is perhaps worth

adding that the total number of Little Stints reported to us for the peak days alone, avoiding duplicates as far as possible, was almost 3,000. Incidentally, ringers at Shotton Pools (Flintshire) trapped 18 Little Stints out of about 50 on 18th September and 40 out of about 120 on the 25th. This total of 58 in one week is more than half the number ringed in Great Britain and Ireland as a whole up to and including 1959.

Although Little Stints were the chief feature of the mid-September wader influx, quite large numbers of other species came in at the same time. Considerable parties of Curlew Sandpipers were widely reported and so were Ruffs, while the numbers of Greenshanks and Spotted Redshanks are perhaps best indicated by a couple of examples. On 18th September Greenshanks reached a peak of 70 at Windmill Creek, Sheppey (Kent). Spotted Redshanks, usually seen in ones and twos, were widely noted in parties of 15-40 in various southern counties and as many as 42 were counted at one place in Hampshire on 17th September. Incidentally, 36 Curlew Sandpipers at the Brent Reservoir (Middlesex) on 28th September appears to be the largest number ever recorded in the London area. Observers in the Midlands commented on the unusual numbers of certain other waders including Ringed Plover (*Charadrius hiaticula*), Dunlin (*Calidris alpina*) and Knot (*C. canutus*): as many as 20 Knot were recorded at Pitsford Reservoir (Northamptonshire), for example, and there were much bigger totals of the other species there and in Leicestershire; in Nottinghamshire there was a gathering of about 220 Dunlins on 1st October.

Compared with the Little Stint, whose range extends only as far west as the extreme north-east corner of Norway, the Temminck's Stint (*C. temminckii*) is a relatively common breeding bird in Fenno-Scandia and it always seems surprising how few are recorded on passage in this country. Last month (p. 405) we were able to list reports from only three areas and since then we have received only three more observations, apart from a "probable" at Hurworth Burn Reservoir (Co. Durham) on 24th September. These were a single bird at Belvide (Staffordshire) on 23rd, 27th and 28th August; two at Windmill Creek, Sheppey (Kent), on 4th September; and one on the marshes of the Dee Estuary on 21st September.

FURTHER AMERICAN SPECIES

In each of our last two summaries (pp. 405 and 454-455) we have listed a number of reports of Nearctic waders and gulls. American species started to appear unusually early and it continued to be a good autumn for them. A total of some 11 Pectoral Sandpipers (*Calidris melanotos*) have already been mentioned and of these the one at Perry Oaks (Middlesex) stayed until 3rd September, while it now seems quite clear that the second bird on the Dee Estuary was a different individual from the first. This species went on dominating the picture until the last week of September, after which only one more was reported. In this second half of the month 11 or 12 more were seen, bringing the autumn total to about 22. The first of these were in the west and south-west, single birds at Kentig Pool (Glamorgan) on 13th September and at Crowan Reservoirs (Cornwall) from the 15th to the 18th, and two at Bardsey (Caernarvonshire) during the 15th-17th; and one at Cley (Norfolk) from the 15th to the 22nd was joined by a second for the last four days of its stay. There was then one at Wisbech sewage farm (Lincolnshire/Norfolk) on the 17th and 18th, and another near Grangemouth (Stirlingshire) on the 19th. The Dee Estuary produced its third on the 22nd, a bird in winter plumage at Shotton Pools (Flintshire), and a week later, on the 28th and 29th respectively, single birds were seen at Blennerville (Co. Kerry) and Dunlaoghaire (Co. Dublin). Finally, there was again one at Cley from 2nd to 8th October.

Also at Blennerville on the same date was a Lesser Yellowlegs (*Tringa flavipes*) and it was seen on the next day as well. The only other Lesser Yellowlegs reported

was near Lewes (Sussex) on 2nd October and this species was outnumbered by three others apart from the Pectoral Sandpipers. Two Buff-breasted Sandpipers (*Tryngites subruficollis*) have already been mentioned and the autumn total of reports was brought to five by the identification of single birds at Belfast Lough (Co. Antrim) during 9th-11th September, at Gullane Golf Course (East Lothian) on the 18th and at Dornoch Point (Sutherland) on the 25th. Gullane, this time Gullane Point, also provided a dowitcher (*Limnodromus* sp.) on the 29th; three other dowitchers, species also uncertain in each case, were recorded at Lough Akeagh (Co. Kerry) from 18th to 28th September, at the same place (a different individual) from 11th October to at least the end of the month, and at Hamilton (Lanarkshire) in the third week of October. There were three reports of White-rumped Sandpipers (*C. fuscicollis*), at Blennerville on 16th September, at Lough Akeagh from 1st to 15th October, and at Sandwich (Kent) on 2nd October. Two other American waders have also been reported since the previous summary, bringing the autumn total of species to some seven. A Greater Yellowlegs (*T. melanoleuca*) was identified on the Camel Estuary (Cornwall) on 22nd and 24th August and, lastly, four observers on Skokholm (Pembrokeshire) on 18th October had very close views of an Upland Sandpiper (*Bartramia longicauda*) at ranges down to 15 yards and were able to obtain photographs of it. One other wader observation might perhaps be mentioned, though it is an Atlantic record rather than a British or Irish one: on 24th August a Hudsonian Whimbrel (*Numenius phaeopus budsonicus*) came on board a ship 160 miles west of Fastnet (Co. Cork) and remained there for nearly 12 hours until it flew into the sea and was drowned when the ship was less than 100 miles from the Irish coast.

A female Blue-winged Teal (*Anas discors*) was identified at Skokholm on 17th September and was almost certainly a wild bird though there is the complication that the female of this American duck is virtually indistinguishable in the field from the female Cinnamon Teal (*A. cyanoptera*) which is not uncommonly kept in captivity. An American Wigeon (*A. americana*), a drake in eclipse plumage, appeared at Staines Reservoir (Middlesex) soon afterwards, on 25th September.

We have also been in the habit of including reports of Sabine's Gulls (*Xema sabini*) with the observations of American species because the weather and their distribution suggests that they and the Grey Phalaropes with which they are so often associated are coming from Greenland or arctic Canada rather than arctic Europe. There was a further influx of Sabine's Gulls on the south coast in the second week of October. On the 9th one was seen at St. Ives (Cornwall), one at Dawlish Warren (Devon) and two at Portland (Dorset). At Portland there were also two on the 10th, at least two on the 11th, one on the 12th and one on the 15th and 16th, 20th and 23rd. All were immatures and, though it was impossible to be sure that more than two individuals were involved, there were probably half-a-dozen different birds and possibly twice that number. We have also received two other reports which tie in with those already mentioned in the previous two summaries: on 3rd August an immature was seen at Castlerock on the estuary of the River Bann (Co. Derry) at the same period as those in Co. Durham and Norfolk (p. 405); and single immatures at St. Ives (Cornwall) on 16th and 21st September completed a series of observations in the south-west in the first three weeks of that month (p. 455).

OTHER WADERS, GULLS AND TERNS

Apart from the American species, very few rare waders were reported. However, there was a particularly interesting record of a Sharp-tailed or Siberian Pectoral Sandpiper (*Calidris acuminata*) at Halton Moss, near Runcorn (Cheshire), seen from 15th to at least 18th October, and trapped on the 16th. Two Fenno-Scandian waders whose occurrences in this country are always a bit of a puzzle are the Great Snipe (*Capella media*) and the Broad-billed Sandpiper (*Limicola falcinellus*). Both

tend to be misidentified by the unwary, large Snipe (*C. gallinago*) being taken for the former and odd Dunlin or Little Stints for the latter. The Great Snipe is now much rarer in northern Europe than it used to be (the Finnish population is now estimated at only 50 pairs, as against 11,000 pairs of Broad-billed Sandpipers) and so very few genuine records are to be expected. Single birds were, however, reported to have visited Fair Isle on 4th and 19th October. Two Broad-billed Sandpipers, one in largely summer plumage and one probably first-year bird, were identified at Shotton Pools (Flintshire) on 22nd September and a single one on Shell Beach by the entrance to Poole Harbour (Dorset) on the 25th. The Black-winged Stilts (*Himantopus himantopus*) on Porlock Marshes (Somerset) and at Wareham (Dorset) (p. 405) stayed until 8th August and at least 6th September respectively; they thus overlapped and so it is clear that two separate individuals were involved. Kentish Plovers (*Charadrius alexandrinus*) included single birds at Ferrybridge, Portland (Dorset), on 29th August and 6th September, and also on the Kingsbridge Estuary (Devon) on 17th and 23rd September, a male at Shellness, Sheppey (Kent), on the 18th and another male in an exhausted state by a farm puddle at Ewhurst Green (Surrey) on 8th October. There were no spectacular numbers of Dotterel (*Ch. morinellus*) such as those recorded in 1959 (*Brit. Birds*, 53: 84-85) and the largest trip reported was one of nine in Breconshire; other parties were seen in Yorkshire and Norfolk.

Four more Mediterranean Gulls (*Larus melanocephalus*) can be added to those listed in our last two summaries (pp. 406 and 455): an adult on 31st July in Langstone Harbour (Hampshire); an immature on 18th September at Salthouse (Norfolk); a 2nd-year bird on 24th-25th September and 9th October at Winterton (Norfolk); an adult on 9th October at Brighton (Sussex). Reports of Iceland Gulls (*L. glaucoides*) included one at Eastney and two and one at Farlington Marshes (both Hampshire), all on 18th September. As far as gulls are concerned, however, the limelight has been stolen in recent months by a much less rare species. Throughout the late summer and autumn Little Gulls (*L. minutus*) were seen in unusual numbers on the coasts of England and also far inland (Scotland is purposely omitted because concentrations occur much more regularly on the Fife and Angus coasts). At Portland, for example, Little Gulls were noted on eight days from 12th September to the end of the month (with maxima of 14 on the 18th and 25th) and every day in October until at least the 16th (with peaks of 12 on the 3rd and at least 16 on the 9th); several were also seen near-by at Lodmoor and Ferrybridge. Apart from east coast counties, where the species is more regular anyway, Little Gulls were remarked upon all along the south coast even to Devon and Cornwall and they also appeared in ones and twos at reservoirs in Essex, Middlesex, Leicestershire, Northamptonshire and Staffordshire. Before leaving the gulls we might perhaps refer briefly to what appears to have been an unusual movement of Lesser Black-backed Gulls (*L. fuscus*) across the Midlands in August and September; from half a dozen counties from Hertford to Derby there came reports of hundreds in places where odd ones are the normal.

Reports of Gull-billed Terns (*Gelochelidon nilotica*) included one at Dungeness (Kent) on 17th September, two at Herne Bay (Kent) on the 20th, and one at Shellness, Sheppey (Kent), on 1st October; and, more interesting, one at Aberlady Bay (East Lothian) on 11th September. White-winged Black Terns (*Chlidonias leucopterus*) have not been much in evidence this autumn and apart from the one mentioned last month (p. 455) the only convincing reports came from Langney Point (Sussex) on 23rd September and Rye Meads (Hertfordshire) on the 29th. Nevertheless, there was a steady trickle of Black Terns (*Ch. niger*) from July through to at least the last week of October. In the period under review there were odd ones as far north as Northumberland and Lancashire and as far west as Cornwall, Glamorgan and Co. Cork. The peak at the end of August has already been mentioned (p. 455),

though it is of interest to add that one reached Bardsey (Caernarvonshire) at that time and as many as 57 were seen as far north as Spurn (Yorkshire). Otherwise the only signs of any increases in numbers were right in the middle of September (16th-18th, the time of the big influx of Little Stints and many other species) and possibly again, on a much smaller scale, in the second week of October. A number of Pomarine (*Stercorarius pomarinus*) and a few Long-tailed Skuas (*S. longicaudus*) were reported throughout the autumn, chiefly off the east coast and off the south coast as far west as Dorset, but no particular pattern emerges. The most unusual skua record was an Arctic Skua (*S. parasiticus*) far inland at Ham sewage farm (Berkshire) on 27th September.

SHEARWATERS

Movements of Balearic Shearwaters (*Procellaria puffinus mauretanicus*) along the Channel have now for some years been a regularly noted feature at Portland Bill (Dorset). This autumn, however, the numbers recorded were quite exceptional even for that locality. We have already mentioned (p. 455) that the passage began there in August and that as many as 88 were seen on 12th September. After that the bird was observed at Portland every day from 12th September to at least 23rd October with as many as 118 on 17th September, 208 on the 18th, 187 on the 25th, 131 on 2nd October, 229 on the 3rd and 120 on the 5th. Other reports of Balearic Shearwaters rather fade into insignificance beside these figures, but it is worth noting that ones and twos were reported from Norfolk, the Isle of Wight, Devon, Cornwall and Pembrokeshire. There also seem to have been more observations than usual of Sooty Shearwaters (*P. gravis*) in English and Irish waters. Between late August and mid-October small numbers were noted off the coasts of Northumberland, Yorkshire, Norfolk, Dorset, Cornwall and Co. Cork as well as out in the English Channel and off the Lancashire coast. In the area of Cape Clear Island (Co. Cork) a total of 98 were seen travelling west or south-west between 31st July and 23rd September. A Manx Shearwater (*P. puffinus*) was picked up on the Leicestershire/Warwickshire border at Orton-on-the-Hill on 1st October.

Last, but by no means least, there was an interesting record of a Cory's Shearwater (*P. diomedea*). This came on board a ship and was taken to Hull (Yorkshire) on 1st October. There it was ringed and released under the auspices of Spurn Bird Observatory. It was thought to be a second-year bird of the North Atlantic race *borealis*.

HERONS, DUCKS AND GEESE

In view of the number of records of American species this autumn it is tempting to speculate about the origins of two of the herons reported. Could the immature Night Heron (*Nycticorax nycticorax*) seen at Great Saltee (Co. Wexford) on 10th and 12th September be of the American race *boattli*? Was the small white egret seen very briefly and rather unsatisfactorily on Cape Clear Island (Co. Cork) on 26th September a Little Egret (*Egretta garzetta*) or a Snowy Egret (*E. thula*) (see *Brit. Birds*, 53: 159 and 413-414)? However, at least one other heron that must have come from the Continent was recorded in the south-west during the period under review and that was a Purple Heron (*Ardea purpurea*) on the Plym Estuary (Devon) on 8th and 9th October. Reports of Spoonbills (*Platalea leucorodia*) were not numerous away from East Anglia but included two as far north as Spurn (Yorkshire) on 30th August and one as far west as Keyhaven Marshes (Hampshire) during 19th-21st September.

Two American ducks have been referred to above. Otherwise apart from the fact that several of the northern species appeared rather on the early side—notably Wigeon (*Anas penelope*), Pintail (*A. acuta*) and Goldeneye (*Bucephala clangula*) in the first fortnight of August—the outstanding feature of the autumn as far as ducks

are concerned has been the number of Red-crested Pochards (*Netta rufina*) at Abberton Reservoir (Essex). G. A. Pyman has shown (*Brit. Birds*, 52: 42-56) that there is a very good case for considering that such birds are wild. This year the first three were noted there on 11th September and by the 18th there were six. This total had risen to at least eight by 9th October and on the 12th there were definitely nine. On the 16th the figure had jumped again and there were then 19. Other Red-crested Pochards included a female at Queen Mary Reservoir (Middlesex) during 8th-16th October, while those at Stanton Harcourt (Oxfordshire) and near Derby, mentioned in previous summaries, stayed on into October; these birds are probably all more likely to have been escapes. A "very wild" female Ferruginous Duck (*Aythya nyroca*) appeared at the Brent Reservoir (Middlesex) on 24th September.

The Dorset Red-breasted Goose (*Branta ruficollis*) which was stated to have been last seen on 30th August (pp. 406 and 455) reappeared again up to 22nd September. We are now informed that considerable numbers of Red-breasted Geese have been imported into Holland and other parts of the Continent in the last year or so, which rather alters the position with regard to observations of this species in this country.

While on the subject of escapes, has any reader any ideas on the possible origin of a Purple Gallinule (*Porphyrio porphyrio*)—the Old World and not the American species—which spent some weeks during the autumn in south-west Lincolnshire?

BIRDS OF PREY

The influx of Little Stints and many other northern and Scandinavian species on the east coast about 16th-18th September (see also below) included a number of birds of prey, among them Honey Buzzards (*Pernis apivorus*), Ospreys (*Pandion haliaëtus*) and Kestrels (*Falco tinnunculus*). Increased numbers of Kestrels at this time were reported from a number of places in the north-east, from Co. Durham and Northumberland northwards, but the influx is best illustrated by figures from Fair Isle where counts are more easily made. At Fair Isle there were never more than half a dozen Kestrels during September, until the 18th when there were at least 15, dropping to 10 on the 19th. Honey Buzzards were seen about this time at Hartlepool (Co. Durham) on the 17th and at Holkham and at Holt (both Norfolk) on the 19th. Ospreys, meanwhile, were noted at Rickmansworth (Hertfordshire), at Crimdon Dene and Hartlepool (both Co. Durham), at Newcastle and at Gowthwaite Reservoir (Yorkshire), all on the 17th, at Cambridge on the 18th, on the Swale Estuary (Kent) on the 19th and 24th, and at Beesands Ley (Devon) on the 21st—ten observations in all. Other Ospreys unconnected with that particular period included one at Exmouth (Devon) on 12th August, one over the Tresillian River near St. Clement, Truro (Cornwall), on 13th September, one at Crickhowell (Breckshire) from 15th September to 6th October, one at Cuxton (Kent) for several weeks from early September (then shot), one at Shellness, Sheppey (Kent), on 3rd and 5th October, and one at Llyn Hilyn Pool (Radnorshire) on 13th October. There was also a Honey Buzzard in the area of Hempstead (Norfolk) in late September and early October.

There was something of an influx of Rough-legged Buzzards (*Buteo lagopus*) in the first week of October, judging from seven observations in ten days. The first appeared at North Cotes (Lincolnshire) on 1st October and was followed next day by two at Somerton (Norfolk) and one at East Linton (East Lothian), the latter staying to at least the 31st. Then one was seen at Holkham (Norfolk) on the 4th and single birds at Walberswick and Minsmere (both Suffolk) on the 8th, while another at Gibraltar Point (Lincolnshire) on the 10th was thought to have been present for a day or two. Birds continued to be seen at Walberswick and Minsmere throughout October and there were two at the latter place on the 25th and 31st. Also in the latter part of the month two arrived on Fair Isle, an adult (which

BRITISH BIRDS

died) on the 21st and a juvenile the following day. Finally, three Goshawks (*Accipiter gentilis*) ought perhaps to be mentioned; these were near Grangemouth (Stirlingshire) on 21st August, on the Exmoor side of Devon on 15th September, and between Truro and Falmouth (Cornwall) towards the end of the third week of September.

THE RARER WARBLERS

On 16th October, the same week-end in which several other Siberian species appeared, a Pallas's Warbler (*Phylloscopus proregulus*) was seen at Walton-on-the-Naze (Essex). There are only four previous records of this species in Britain and yet a week later, on the 22nd and 23rd, another Pallas's Warbler appeared at Spurn and was ringed on the second date. The equally small Yellow-browed Warbler (*Pb. inornatus*) was again well represented. None was reported until the end of September, but then there was quite a little rush of these birds. At Cape Clear Island (Co. Cork) there were three on 27th September, two on the 28th, one on the 29th, one on the 30th, five or more on 1st October, two on the 2nd and 3rd and one on the 4th and 5th, thus suggesting two influxes four days apart. Several other records fit in very well with the first of these influxes and it seems likely that almost all the Yellow-browed Warblers came in on the night of 26th/27th September, later observations involving birds on redetermined passage. At Fiar Isle the first was actually one on the 22nd and 23rd, but then on the 27th and 28th no less than six were seen, after which there were odd ones on the 29th, 30th (two), 2nd October, 6th, 7th, 15th (two), 16th, 17th and 18th. The remaining observations are mainly clustered on or just after the date of the first influx, but one later record fits in with the impression on Fair Isle of a small fall in mid-October (the time of the first Pallas's Warbler). The remaining Yellow-broweds were as follows then: Bardsey (Caernarvonshire), one at the light after dark on 26th September; Spurn (Yorkshire), one (ringed) from 27th to 30th September, and two others on 14th and 30th October; Gibraltar Point (Lincolnshire), one trapped on 28th September; and Portland (Dorset), one ringed on 30th September and 1st October. Fair Isle and St. Agnes (Isles of Scilly) provided the autumn's only records of Arctic Warblers (*Pb. borealis*), on 21st September and 10th October respectively, but a bird which was either Arctic or Greenish (*Pb. trochiloides*) was seen at Spurn during 17th-19th October. To the list of Greenish Warblers mentioned last month (p. 456) during the early days of September may be added a report of one at Kelling (Norfolk) on the 1st, and another was identified at Cowplain (Hampshire) on 2nd October.

Eleven Icterine Warblers (*Hippolais icterina*) and eight Melodious Warblers (*H. polyglotta*) have already been mentioned (pp. 406 and 456) and, as usual, the steady trickle of these birds continued until late September. In fact, another dozen Icterines brought the autumn total to quite a handsome figure. To the late August reports already listed we can now add two at the Isle of May (Fife) on the 29th; and there was one, probably two, at Roweholt near Wimborne (Dorset) on 7th September, followed by one at Holme (Norfolk) on the 11th and one at Great Saltee (Co. Wexford) on the 13th (probably also the day before). Then at the beginning of the main period covered by this summary there was a little spate of records during the influx of Scandinavian birds in mid-September. One stayed at Dungeness (Kent) from 16th to 18th September and was ringed; others were seen at Hartlepool (Co. Durham) and Blyth (Northumberland) on 17th and 18th respectively. Norfolk then entered the picture again with one at Cley on the 21st and one at Holkham on the 23rd; and one was trapped at Gibraltar Point (Lincolnshire) on the 26th. Finally there were two more observations at Cape Clear Island (Co. Cork) on 25th and 28th September, and one was seen at the Sands of Forvie (Aberdeen-shire) on 5th October. A bird that may have been either Icterine or Melodious was watched at Bradwell (Essex) on 9th September. The half dozen Melodious

Warblers were, as is usual in autumn, confined to the south coast and Irish Sea area. There was still one at Bardsey (Caernarvonshire) until 5th September and one was trapped at Dungeness on the 9th. Then came three more records at Portland (Dorset) in quick succession, single birds being trapped on 12th and 18th and one being seen on the 24th and 25th, the last bringing the autumn total to four (as well as two Icterines and one unidentified *Hippolais*). Meanwhile the third and fourth of the autumn at Cape Clear Island appeared there on the 16th and 25th.

Another very rare species at Fair Isle was a Lanceolated Warbler (*Locustella lanceolata*) trapped there on 4th October, after its presence had first been suspected on 30th September. There are only nine previous British records of this species, all but two of them at Fair Isle! Nothing like as many Aquatic Warblers (*Acrocephalus paludicola*) were seen this autumn as the 20 or so in 1959 (*Brit. Birds*, 53: 423-424). Nevertheless, at least eight were reported between mid-August and mid-October: at Hilfield Park Reservoir (Hertfordshire) on 14th and 15th August; at the Isle of May (Fife) on 27th August and again in September; at Titchfield Haven (Hampshire) on 4th and 25th September; at Fair Isle between 14th and 18th September; at Dungeness (Kent) on 18th September; and at St. Agnes (Isles of Scilly) on 9th October.

Coming now to Barred Warblers (*Sylvia nisoria*), we have already mentioned a number of birds in late August (pp. 406 and 456) and to the localities given for that period should be added Monks' House (Northumberland). There was a further fall of these birds during the mid-September influx, but apparently only very small numbers were involved and most of these were in north-east England. The species (single birds unless otherwise stated) was recorded then at Blyth (Northumberland) and Dungeness (Kent) on the 17th, at Seaton Sluice (Northumberland) on the 18th (two), at the Butt of Lewis (Outer Hebrides) on the 19th and 20th (two, both dead), at Skokholm (Pembrokeshire) on the 20th, at Hartlepool (Co. Durham) on the 21st and at Cley (Norfolk) on the 25th. At Fair Isle, where 15 were caught in August and September, there were odd ones in mid-September up to the 20th and then single birds on the 23rd and 27th. Three weeks after that, Northumberland entered the picture again with a late bird on 18th October at Hartley, near Whitley Bay. Dartford Warblers (*S. undata*) are not often recorded on passage and so it seems of interest to mention one or two near Prawle Point (Devon) on 13th October and an adult male at Portland three days later.

BLUETHROATS

After the very small number of Bluethroats (*Cyanosylvia svecica*) in August and the first half of September (p. 456), to which should be added single birds at Fordwich (Kent) and Selsey Bill (Sussex) on 4th and 11th September respectively, there was something of an influx in the third week of September. The ones which appeared then formed part of a fairly considerable fall of Scandinavian Passerines—the only notable fall of this type during the autumn—which has been referred to several times above in passing because it coincided with the great influx of Little Stints and the arrival of a number of birds of prey. It will be more fully dealt with in the next number of *Bird Migration* and it is sufficient for our purposes here to say that it consisted of the usual mixture of warblers, Wheatears (*Oenanthe oenanthe*), Whinchats (*Saxicola rubetra*), Redstarts (*Phoenicurus phoenicurus*), flycatchers and pipits, with smaller numbers of Wrynecks (*Jynx torquilla*), Robins (*Erithacus rubecula*), Red-backed Shrikes (*Lanius cristatus collurio*) and Bluethroats.

The fall was most marked in north-east England and east Scotland, and so it is not surprising that the great majority of the Bluethroats during this period were recorded between north Yorkshire and Fair Isle. At Fair Isle the first was noted on 15th September and three on the 16th were followed by six on the 17th, ten on the 19th (after a drop on the 18th) and seven on the 20th, the numbers then dwindling

until the last was seen on the 23rd. Reports from elsewhere show a similar pattern. Apparently there were no others on the 15th, but on the 16th the species was noted at Bamburgh and Newton (two) in Northumberland; at South Gare, Redear (two) and Filey in Yorkshire; and at Cley (Norfolk) and Dungeness (Kent). However, it should be added that the Dungeness bird was an adult male of the White-spotted form (*C. s. cyaneula*), whereas those on the east coast were probably all Red-spotted (*C. s. svecica*) and several were in fact identified as such. On the 17th there were four at Seaton Sluice and six at Hartley (both Northumberland); one in the Marsden-Whitburn area, two at Crimdon Dene, nine at Hartlepool and three at North Gare (all Co. Durham); and six at South Gare (the Yorkshire side of Teesmouth). Note that this was one of the peak days at Fair Isle. On the 18th the only mainland reports were of one at Blyth (Northumberland) and two at Hartlepool, and on the 19th just three between Briardene and St. Mary's Island (Northumberland), apart from a first-winter bird at Dungeness. On the 20th two more appeared at Cley, and on the 22nd southern counties again came into the picture when an adult male Red-spotted was trapped at Northfleet (Kent) and a first-winter bird was caught near Poole (Dorset). On the 23rd Spurn, situated at the very southern tip of Yorkshire, had what was only its second of the autumn. There was a late Blue-throat at Cape Clear Island (Co. Cork) on 23rd October.

FLYCATCHERS AND SHRIKES

Last month (p. 456) we mentioned that only two Red-breasted Flycatchers (*Muscicapa parva*) had been reported up to the middle of September; in fact, however, there was also a male at Spurn (Yorkshire) on 26th August. Then, apart from the two common species of flycatchers, quite a few Red-breasted occurred during the big fall of Passerines (see under BLUETHROATS above) in the third week of September. On the 16th there was one at Filey (Yorkshire) and on the 17th one at Seaton Sluice (Northumberland) and one at Fair Isle, while the 18th saw singles at the Ythan Estuary (Aberdeenshire) and the Isle of May (Fife) and two at Fife Ness. However, the main fall of this species seems to have taken place later in the month and in early October. On the 23rd another appeared at Fair Isle and was ringed. On the 25th one was seen at Hartley (Northumberland) and, more unexpected, one at St. Catherine's Point (Isle of Wight). The species occurred at Spurn from 27th September to 6th October without a break and during this time two were ringed on the 27th while two on 5th October included an adult male. There was at least one more at the Isle of May about this time, and another at Fife Ness on 30th September and 1st October, while one stayed at Blakeney Point (Norfolk) for much of the last week of September into October. One at Cape Clear (Co. Cork) on 30th September was probably the same bird as was seen up to 5th October, having been ringed on the 2nd. On 1st October there was one at Tetney (Lincolnshire) and one stayed at Hartlepool (Co. Durham) from the 1st to the 3rd. Meanwhile two were seen at Gibraltar Point (Lincolnshire) on the 2nd, and one at Holy Island (Northumberland) on the 3rd. Fair Isle then came back into the picture with single birds on 5th, 7th and 18th October, while other later ones included singles at Spurn on the 13th and 14th, one right round at St. Agnes (Isles of Scilly) on the 14th, singles at Dungeness (Kent) on the 19th-22nd and 21st-23rd, and another at Hartlepool on the 22nd. The autumn total was thus 35 or more, though this is less than half the number recorded in 1959 (cf. *Brit Birds*, 53: 46-47).

The only Woodchat Shrike (*Lanius senator*) to be added to those already mentioned (pp. 406 and 456) is a juvenile that was found dead at Great Saltee (Co. Wexford) on 9th September. A first-winter Lesser Grey Shrike (*L. minor*) was identified at Gibraltar Point on 11th October and there was a probable one near Coxhoe (Co. Durham) on the 24th. Gibraltar Point also produced the first Great Grey Shrike (*L. excubitor*) of the autumn on 18th September and no others were reported at

that time. The likelihood that a real influx of this species took place around the turn of the month seems high, however, to judge from more or less simultaneous reports between 29th September and 3rd October from a number of east coast counties from Norfolk north to Yorkshire, Co. Durham, Northumberland and Fife, as well as Fair Isle. In the rest of October Great Grey Shrikes (still chiefly in east coast counties) appeared to be more numerous and widespread than usual.

LARKS, PIPITS AND WAGTAILS

Short-toed Larks (*Calandrella cinerea*) were seen in Scotland and Ireland. At Fair Isle a typical southern bird stayed from 1st to 10th October, and was overlapped by the first of three Eastern-type grey birds which were recorded during the 9th-11th and on the 15th and 22nd. The Irish observation was at the North Slob (Co. Wexford) on 26th September.

Three of the less common species of pipits were each represented by several observations during the autumn. Red-throated Pipits (*Anthus cervinus*) were identified only at Fair Isle, on 16th September, from 2nd to 10th October and from 22nd to 27th October, the second of these three birds being trapped and ringed. Norfolk provided the only two Richard's Pipits (*A. richardi*) reported in September—at Cley on the 19th and at Gore Point, Hunstanton, on the 25th-26th—but two others appeared elsewhere in October, at Brean Down (Somerset) on the 16th and at Fair Isle from the 21st to the 23rd. Three Tawny Pipits (*A. campestris*) in early September (p. 456) were followed by a number of other reports in Sussex and Kent later that month. At Selsey Bill (Sussex) a pattern of one on the 17th and at least three on the 18th agreed very closely with the picture at Langney Point 50 or 60 miles further east in the same county: there was also one on the 17th and then two on the 18th and 19th, as well as another on a different part of the Crumbles on the last of these three days. There was then a gap until the following week-end when on the 24th an adult and an immature were respectively identified at Reculver and Yalding (both Kent), after which there was again one at Langney Point on the 25th and 27th.

A first-winter Yellow-headed Wagtail (*Motacilla citreola*) was again recognised at Fair Isle from 17th to 22nd October; this species was added to the British and Irish list in autumn 1954 when two young birds appeared at the same place (*Brit. Birds*, 48: 26-29). An adult male Grey-headed Wagtail (*M. flava thumbergi*) was watched at Selsey Bill on 18th September, at the time of the Tawny Pipits there.

SISKINS AND OTHER IRRUPTION SPECIES

On 16th September, at the time when so many other species were beginning to appear on the coasts of north-east England and Scotland, Siskins (*Carduelis spinus*) started to pour into the same general areas and numbers rapidly reached high proportions. At Fair Isle ten on the 16th were followed by 21 on the 17th; the figure had risen to 40 by the 20th and to 85 by the 22nd, after which the numbers dropped away to only a handful by the end of the month and odd ones until 15th October. In north-east England the first ones were noted in the area of Newton and Seahouses (Northumberland) during the early afternoon of 16th September and by 4 p.m. the species was widespread and numerous; 16 were caught together in a single mist-net at Newton. The birds remained plentiful there until at least the 19th and they were also noted as common near-by on the Farne Islands at this time. Meanwhile, not far away at Craster "every bush and shrub seemed to contain a few" on the 18th. That day, too, and to a lesser extent on the 17th, flocks of 30-100 were reported at various localities further south in Northumberland and in Co. Durham and north Yorkshire. In most cases these had dropped right away by the 19th and it is perhaps significant that a heavy passage started that day at Spurn (Yorkshire) where a few had been noted since the 17th: the peaks of the passage there were 167 on the 19th,

244 on the 21st, 140 on the 22nd and 97 on the 25th, after which there was a tremendous drop and the maximum in the following fortnight was only about 25 on 2nd October. At Gibraltar Point (Lincolnshire), meanwhile, a heavy south-west movement was noted during 20th-22nd September and small numbers began to appear in other areas as far west as Nottinghamshire and Warwickshire and as far south as Hampshire and Sussex during the 21st-25th, while on the 25th five arrived at the Butt of Lewis (Outer Hebrides). There were many in the area of Minster (Suffolk) by this time, and flocks on the Norfolk coast at the end of September included 350 at Winterton and 300 at Kelling. Only small numbers remained in north Lincolnshire at the end of September and in early October. By 1st October flocks of 35 were in Derbyshire/Leicestershire, and by the 2nd the species was well distributed in the Norfolk and Suffolk Brecklands and the first ones had reached Gloucestershire. About 5th October Siskins began to be reported moving over London during early morning watches there, reaching a peak about the 10th-11th and possibly again about the 15th. By 10th-12th October a good many inland English counties were referring to "large numbers".

Though quite unconnected with Siskins, two or three other species might briefly be mentioned here because they are also prone to erupt from their breeding areas when their numbers exceed the food supply. It is perhaps to be hoped that Waxwings (*Bombycilla garrulus*) will give us a rest from any real invasion this winter since the analysis of the recent series of irruptions is still unpublished! However, we note that in October odd ones appeared at Fair Isle from the 14th, and the first flocks in Roxburghshire and East Lothian and a few down in Kent on the 30th-31st. Secondly, our own population of Bearded Tits (*Panurus biarmicus*) in Norfolk and Suffolk is again showing signs of breaking out (*cf. Brit. Birds*, 53: 422-423). Observers in several localities in early October reported a restlessness among these birds similar to that noted in the autumn of 1959, and later in the month parties of between two and six appeared at four localities in Essex—Foulness, Mucking, Walthamstow and Bishop's Stortford (the last just on the Essex side of this Hertfordshire town); one of two at Foulness was killed by a Great Grey Shrike. Thus it may well be worth watching for these birds again in reed-beds almost anywhere in the country. Finally, small numbers of Blue and Great Tits (*Parus caeruleus* and *major*) were reported on the move at several localities in the south and south-east during September and October, while the numbers of Long-tailed Tits (*Aegithalos caudatus*) have caused comment from Yorkshire to London and Kent and from Cheshire and Staffordshire to Devon, as well as in several areas in W Scotland.

OTHER FINCHES AND BUNTINGS

Scarlet Grosbeaks (*Carpodacus erythrinus*) continued to be reported from Fair Isle where there were one or two on most days during September and there were two more observations elsewhere (*cf. p. 456*), at the Isle of May (Fife) on 1st September and at Spurn (Yorkshire) on 1st October.

Buntings have included two or three Rustic (*Emberiza rustica*), eight or nine Little (*E. pusilla*), two Red-headed (*E. bruniceps*) and a sprinkling of Ortolans (*F. hortulana*). At Fair Isle there was at least one Rustic Bunting on 22nd-23rd September and what was probably a new arrival on the 27th, after which one appeared at St. Agnes (Isles of Scilly) on 7th October. Apart from two at Cape Clear Island (Co. Cork) on 11th September and one in north Norfolk at the end of that month, Fair Isle also provided all the Little Buntings, on 7th-10th September (trapped), 14th-15th September (trapped), 27th September (two, one staying to 30th), 2nd October (one) and 14th-16th October (trapped). The Red-headed Buntings, adult males as usual, were at the Isle of May on 28th August and at Portland on 19th, 22nd and 23rd September. Very few Ortolans had been reported when we came to write the previous summary (*p. 456*), but in addition to the eight or so mentioned then observa-

tions of some 16 or more further individuals have now reached us. On 28th August (when, as we have already noted, there were three on Fair Isle), two appeared on the Isle of May and one was seen at Beal (Northumberland). A few, but only a few, took part in the influx of Passerines in the third week of September, about which time there was one at Bardsey (Caernarvonshire) during the 14th-16th, three at Cley on the 17th, one or two at Fair Isle during the 17th-23rd, one at Skokholm (Pembrokeshire) on the 24th and one at Beachy Head (Sussex) on the 25th. Later there was something of an influx at Cape Clear Island in the first week of October with one on the 1st, two on the 2nd, one on the 3rd, four on the 4th, three (including an adult male) on the 5th and one on the 7th; meanwhile an immature was seen at Portland on the 2nd.

There was a considerable influx of Lapland Buntings (*Calcarius lapponicus*) in the second week of September, reaching a peak in the middle of the month. At Fair Isle the first ones were noted on the 6th, the numbers rising quickly to 18 by the 9th and about 90 by the 13th-14th; fluctuations followed up to the 25th, when there were 40, and then there was a decrease so that the most reported in October was ten on the 4th. Parties were seen in western Ireland and there the pattern was very similar: at Erris Head (Co. Mayo), for example, the first ones appeared on the 9th and the total rose to 24 by the 11th. In England and Wales, as is usual with this species, the numbers were smaller and later. Odd birds were seen on the east coast from Northumberland to Norfolk and in the south from Dorset to Cornwall and the Isles of Scilly, and also Pembrokeshire and Co. Cork.

REDWINGS AND FIRECRESTS

For want of anywhere better to include it, we open this section with a very interesting observation of a female Red-flanked Bluetail (*Tarsiger cyanurus*) at Hartley (Northumberland) on 16th October—the very same time when three other mainly Siberian species appeared on Fair Isle (Yellow-headed Wagtail) and in Essex (Pallas's Warbler) and Cheshire (Sharp-tailed Sandpiper) (see above). There are only two or three previous British records of this colourful bird.

The first autumn immigrant Redwing (*Turdus musicus*) to be reported was one at Blakeney Point (Norfolk) on 1st September. On 28th September the big numbers really started to arrive. That day and on the next two there was a large fall of Redwings—many places noted “hundreds”—all down the east coast from Fair Isle to north Kent and there were also odd ones in south Kent at this time.

Several particularly interesting observations make it clear that a lot of Redwings came to grief then. Between Sutton-on-Sea (Lincolnshire) and Minsmere (Suffolk) there were seven or eight reports of Redwings being found dead along the tide-line. At Southwold (Suffolk), for example, no less than 42 corpses were counted in one small area on 30th September and two days later, on 2nd October, as many as 70 and 90 respectively were found along the shore at Sutton-on-Sea and Gibraltar Point (Lincolnshire). In north Norfolk at the end of September some of the incoming Redwings were described as “only just able to reach the first clumps of marram or sea-buckthorn” and it was possible to pick a number of them up. It appears that there must have been a considerable disaster at that time and we should be very interested to hear of any other evidence of a “wreck” of these birds.

Firecrests are now regular spring and autumn migrants in small numbers, but it is interesting to look at the general pattern for this period at Dungeness (Kent) and Portland (Dorset), the two places where this species is most often recorded. At Dungeness there were odd birds from 16th September onwards and then an influx of six on the 29th; some were then present throughout October, with a maximum of ten on the 23rd. At Portland there was one on 18th September and then none until the 28th when there were nine; the numbers then dropped during the next three days until there was a new influx of at least eight on the afternoon of 2nd

October, followed by decreasing numbers again up to at least the 10th. There were several other reports of Firecrests in Kent and East Anglia in early October and on the 2nd single ones appeared as far north as Gibraltar Point (Lincolnshire) and Spurn (Yorkshire), the latter staying until the 3rd.

SWIFTS AND HOOPES

A considerable number of observations of October Swifts (*Apus apus*) and other late summer-visitors will be summarised next month, with one or two other subjects that have had to be held over. Three Alpine Swifts (*A. melba*) were reported during the period under review. The first was at Dungeness (Kent) on 7th September and the other two were a month later, at Portishead (Somerset) on 2nd October and by the South Stack, Holyhead (Anglesey), on the 8th.

Finally, we should perhaps just draw attention to the remarkably poor autumn that it was in general for Hoopoes (*Upupa epops*), even though in early September two were reported as far north as Edinburgh and Pitlochry (Perthshire). To take the extremes of the south coast, the area where most are usually seen: not one was reported from Kent in September or October and not one was recorded at St. Agnes (Isles of Scilly) in the whole autumn.

Exhibition by contemporary bird painters

AT THE SUGGESTION of the Reading Ornithological Club, the Reading Art Gallery has made its rooms available for an exhibition of contemporary bird paintings. This Exhibition was opened by Field Marshal Viscount Alanbrooke, K.G., G.C.B., O.M., on Saturday 26th November and will last until Saturday 24th December. It has been organised by a special committee, the members of which are Eric Ennion, Robert Gillmor (Hon. Secretary, Reading Ornithological Club), T. L. Gwatkin (Director, Reading Museum and Art Gallery), Peter Scott, Keith Shackleton and Maurice Bradshaw (Secretary, Art Exhibitions Bureau). The Art Exhibitions Bureau is handling the collection of the pictures (and, incidentally, will take part of the exhibition on tour next year). All are welcome and it is hoped that as many people as possible will visit the exhibition to make it a success.

This is the first exhibition ever to bring together the work of living British bird painters; invitations were also sent to a number of American and Continental bird artists and, altogether, more than thirty artists are represented by up to six works each. The pictures exhibited cover a wide range of techniques from large oil paintings and watercolours to original prints. There is also a separate documented section to show how the bird artist gathers his material with sketches, habitat studies and notes. It is not intended on this occasion to cover the fields of pure illustration, but that might well be a subject for a future show as it is hoped that this year's event will lead to the formation of a society of bird painters which would hold further exhibitions.

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British Birds publishes material dealing with original observations on the birds of Britain and western Europe, or, where appropriate, on birds of this area as observed in other parts of their range. Except for records of rarities, papers and notes are normally accepted only on condition that the material is not being offered to any other journal. Photographs (glossy prints showing good contrast) and sketches are welcomed. Proofs of all contributions accepted are sent to authors before publication. After publication 20 separates of papers are sent free to authors; additional copies, for which a charge is made, can be provided if ordered when the proofs are returned.

Contributors are asked to observe the following points, attention to which saves the waste of much editorial time on trivial alterations:

1. Papers should be typewritten with double spacing, and on one side of the sheet only. Shorter contributions, if not typed, must be clearly written and with similar spacing. Failure to help in this way may result in delays to publication.

2. Notes should be worded as concisely as possible, and drawn up in the form in which they will be printed, with signature in block capitals and the writer's address clearly written on the same sheet. If more than one note is submitted, each should be on a separate sheet, with signature and address repeated. In the case of rarity records, any supporting description which is too detailed for publication should be attached separately.

3. Certain conventions of style and layout are essential to preserve the uniformity of any publication. Authors of papers in particular, especially of those containing systematic lists, reference lists, tables, etc., should consult the ones in this issue as a guide to general presentation. English names of species should have capital initials for each word, except after a hyphen (e.g. Willow Warbler, Black-tailed Godwit), but group terms should not (e.g. warblers, godwits). English names are those used in *The Handbook of British Birds*, with the exception of the changes listed in *British Birds* in January 1953 (46: 2-3). The scientific name of each species should be given (in brackets and underlined) immediately after the first mention of the English name. Subspecific names should not be used except where they are relevant to the discussion. It is sometimes more convenient to list scientific names in an appendix. Dates should take the form "1st January 1960" and no other, except in tables where they may be abbreviated to "1st Jan.", "Jan. 1st", or even "Jan. 1", whichever most suits the layout of the table concerned. It is particularly requested that authors should pay attention to reference lists, which otherwise cause much unnecessary work. These should take the following form: TUCKER, B. W. (1949): "Species and subspecies: a review for general ornithologists". *Brit. Birds*, 42: 129-134.

WITHERBY, H. F. (1894): *Forest Birds: Their Haunts and Habits*. London. p. 34. Various other conventions concerning references, including their use in the text, should be noted by consulting examples in this issue.

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British Birds

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The Little Ringed Plover in Great Britain during 1957-59

By E. R. Parrinder

IN 1959, TWENTY-ONE YEARS after the species first nested at Tring Reservoirs, Hertfordshire, just under 100 pairs of Little Ringed Plovers (*Charadrius dubius*) are known to have spent the summer in Britain. This is a sizeable increase from the number, about 70 pairs in 1956, at the end of the period covered by the last report on their status (*Brit. Birds*, 50: 365-371).

Although the total number recorded has increased, the breeding range has been extended to only one new county. A pair probably bred in Warwickshire in 1958 and four pairs certainly bred there in 1959. Breeding has now occurred in every county in England south of the Tees except for Norfolk, Rutland, Lancashire, Shropshire, Worcester, Hereford, Wiltshire and the four counties to the south-west. Rather less than three-quarters of the summer population is in the counties south-east of a line from the Wash to the Severn. North of this line, the main concentration is in Lincolnshire and Yorkshire, where five and ten pairs respectively summered in 1959.

In Norfolk, the only east coast county south of the Tees where breeding has not yet been proved, Little Ringed Plovers were seen on passage in each of the years from 1957 to 1959, especially at Cley, Salthouse and Wisbech sewage farm (*Norfolk Bird Reports* and *per* M. J. Seago). West of the breeding counties, one or two were seen on passage in Lancashire in 1958 and 1959 (*per* K. G. Spencer); in Shropshire in 1957 and 1958 (*per* E. M. Rutter); in Worcestershire in 1959 (*per* J. Lord) and in Somerset in 1958 (*per* H. H. Davis). One by receding floods at Lugg Meadows, Sutton St. Nicholas, on 18th April, 1959, was the first record for Hereford (*per* R. H. Baillie) and one by Poole Harbour on 2nd April 1959, and one at Weymouth on

8th September 1959, were the second and third recorded in Dorset (*per* A. J. Bull).

Perhaps the most interesting development since the last report is the exceptional number seen after the breeding season in 1958 and 1959 at sewage farms near London. In 1959, for example, 26 were seen on 19th July on one stretch of mud at Perry Oaks, Middlesex, while at Rye Meads, Hertfordshire, there were 35 on 26th July and more than 40 on the 29th.

The details which follow are confined to nesting records and to occurrences in counties where nesting has occurred. I am grateful to the observers named and to the editors of local reports who have borne my pestering with patience and supplied me with information as soon as they have received it themselves.

HAMPSHIRE

Nested 1952 and as under.

1957. A pair by Southampton Water in April and May, but no sign of nesting. A pair reported as nesting unsuccessfully in another locality (*Hampshire Field Club Orn. Report 1957*).

1958. Again seen by Southampton Water but no breeding. A pair nested at a new site (not the second one mentioned above) (*Hampshire Field Club Orn. Report 1958*).

1959. One pair nested (*per* J. H. Taverner). Two were seen in June at a previously unrecorded locality, where it seems that Little Ringed Plovers may have summered in each of the four previous years (*per* W. D. Campbell).

SUSSEX

Has nested annually since 1949.

1957. Four pairs were present at the original breeding place, but it is not known whether they nested. One pair nested successfully at another site (*Sussex Bird Report 1957*).

1958. Two pairs summered at the usual site, but there was no evidence of breeding. At the second site, three young were hatched from the second attempt (*Sussex Bird Report 1958*).

1959. None seen at the original site. Breeding was not proved at the second site, but a pair was seen there in July and August, two flying young in late July and one in early August (*per* D. D. Harber).

KENT

Nesting proved in most years since 1947.

1957. In the London area, one or two were seen on the Thames marshes in April, June and September; a party of four on 8th August included two juveniles, but there was no direct evidence of nesting

(*London Bird Report 1957*). Outside London, two pairs are known to have nested out of about six pairs present at three sites—including one new site. Reported from nine localities on passage, the maximum being 12, including a resident pair, on 26th May (*Kent Bird Report 1957*).

1958. A pair laid at one site in the London Area, but eventually deserted; at another site a pair behaved as if breeding, but no proof was obtained (*London Bird Report 1958*). Elsewhere, six pairs attempted breeding at five sites (two new); breeding was successful at three sites and at least five young are known to have flown (*Kent Bird Report 1958*).

1959. About seven pairs summered at six different sites and at least four pairs are known to have bred (*per* E. H. Gillham and R. E. Scott).

SURREY

Nesting proved in most years since 1950.

1957. Three or four pairs nested at a gravel pit. Seen on passage at other pits and at Guildford, Esher and Hersham sewage farms (*London Bird Report 1957* and *per* R. K. Murton).

1958. About seven pairs summered, at five sites; five pairs are thought to have bred (*London Bird Report 1958* and *per* R. K. Murton).

1959. About five pairs present and probably bred, including four pairs at one site. Seen as usual at sewage farms and reservoirs on migration (*per* R. E. Scott and R. K. Murton).

ESSEX

Has nested annually since 1947.

1957. In the London Area, nine or ten pairs were located, at five sites; six pairs are known to have nested and two more probably did so (*London Bird Report 1957*). At least two pairs, probably three, bred in extra-Metropolitan Essex, for the first time. At Abberton Reservoir, one to three were seen on passage on many dates from 28th July to 19th September (*Essex Bird Report 1957*).

1958. Seven pairs appear to have nested out of nine located at five sites in the London Area (*London Bird Report 1958*). Two pairs again present at the site outside London (see above); the eggs of one pair were deserted and there was no evidence that the other pair attempted breeding (*Essex Bird Report 1958*).

1959. In the London Area, at least nine pairs summered at five sites, but only eleven young are known to have reached the flying stage (B. S. Meadows; *per* P. R. Colston). No breeding was reported from extra-Metropolitan Essex—the 1957-58 site was flooded and unusable. On passage one to four were seen at both Abberton and Hanningfield Reservoirs on most autumn dates to 21st September (*per* R. Hudson).

BRITISH BIRDS

HERTFORDSHIRE

Nested 1938, 1944, 1948 and annually since 1953.

1957. Ten pairs are known to have nested in widely separated parts of the county; at least two pairs attempted a second brood (*London Bird Report 1957*).

1958. Ten pairs summered, as in 1957, and nine pairs certainly nested. Four sites had single pairs, but at the fifth six pairs nested in June after attempts in May by four pairs had been frustrated by flooding. At Broxbourne sewage farm, twelve were seen on 8th July and 16 from 23rd to 29th July (*London Bird Report 1958*).

1959. At least five pairs summered, at three sites, and four pairs are known to have bred. Exceptional numbers were recorded throughout July at Rye Meads sewage farm; maxima were 12 on 1st July, 14 on the 8th, 10 on the 22nd, 35 on the 26th and more than 40 on the 29th (*per* B. S. Meadows and P. R. Colston).

MIDDLESEX

Nesting proved in most years since 1944.

1957. Four out of five pairs summering are known to have nested. On passage up to ten were seen at Perry Oaks sewage farm in May, July and August and up to three at Ponders End sewage farm from the end of July to 4th September (*London Bird Report 1957*).

1958. About seven pairs were located at two sites; eight nests were found at one site, but there was a heavy loss of eggs due to flooding and possibly to human predation and disturbance, and not more than two broods are likely to have flown. Maxima on passage, eight at Perry Oaks sewage farm on 12th April and 13 on 5th and 17th July. On 27th August, one was seen in Regent's Park—the first occurrence in Inner London (*London Bird Report 1958*).

1959. At least four pairs nested successfully; one clutch is known to have been robbed by a collector. As usual, birds were noted on passage at reservoirs and sewage farms; and at Perry Oaks sewage farm no less than 26—including 23 juveniles—were seen on one stretch of mud on 19th July (many observers *per* P. R. Colston).

BERKSHIRE

Nesting proved in most years since 1947.

1957. Two pairs were located in the Kennet valley; a nest was found and later the presence of young was suspected but not proved. At Ham sewage farm, up to three were seen regularly from 29th March to 9th September; display was seen on several occasions and up to five free-flying juveniles occurred in the late summer, but there was no proof of breeding (*Oxford Orn. Soc. Report 1957* and *Middle Thames Naturalist 1957*).

1958. At least three pairs were located and probably bred in the Kennet valley. Two pairs bred at Ham sewage farm, but the fledging success seems to have been small and five juveniles seen with six adults on 10th August were probably on passage (*Middle Thames Naturalist* 1958 and *per* W. D. Campbell).

1959. About six pairs summered in the Kennet valley and at least three pairs are thought to have nested (*per* W. D. Campbell). At Ham sewage farm, two were seen on 29th March and then through April and May; anxiety calls were heard but there was no positive evidence of breeding (*per* C. M. Veysey).

OXFORDSHIRE

Nested 1954 and as under.

1957. One pair bred successfully (*Oxford Orn. Soc. Report* 1957).

1958. One at former breeding site on 30th March. Two at Park Meadow, Oxford, 22nd April (*per* W. D. Campbell).

1959. Two pairs were found in a new locality; both pairs nested successfully, one pair laying two successive clutches of three eggs and rearing two young from each clutch. This site had not been closely watched in other years and previous breeding may have been overlooked (G. and M. Turner, M. H. Rowntree *per* W. D. Campbell).

BUCKINGHAMSHIRE

Has nested occasionally since 1949.

1957. Three or four pairs were seen at one locality and at least two pairs bred; a pair was seen during the summer at a new locality in the north of the county (*Middle Thames Naturalist* 1957).

1958. At the first locality mentioned above, two were seen on 30th March, five or six on 22nd April and two pairs on 5th June. By then, soil dumping had started and the possible breeding area was submerged during the summer—no birds were seen after 5th June. At least one of two pairs at another site behaved as if breeding (*per* C. M. Veysey).

1959. At least one pair, probably two, bred at one site and a pair may have bred at another (*per* C. M. Veysey).

SUFFOLK

Nested annually 1948-53 and as under.

1957. One at Walberswick on 5th and 6th August and one at Easton and Covehithe Broads on 8th September (*Suffolk Bird Report* 1957).

1958. A nest containing four eggs was found, but three failed to hatch. At one stage the army practised landing exercises over the site, but afterwards the birds were found still sitting on a nest straddled by

BRITISH BIRDS

wheel ruts; the lack of hatching success was attributed to the cold, wet June. Immature birds were seen at Walberswick on 16th and 17th August and at Bury St. Edmunds on 24th August (*Suffolk Bird Report 1958*).

1959. Single birds at West Stow sewage farm on 3rd May, Minsmere on 29th July, Walberswick on 29th July and 12th August, the River Orwell on 8th August and Bury on 23rd August. Two at a previous breeding place on various dates from 10th May to 27th June, but no evidence of nesting (*per* H. R. Beecroft).

CAMBRIDGESHIRE

Has nested annually since 1952.

1957. Two or three pairs bred at Cambridge sewage farm and four pairs bred at two other localities. Three pairs were seen at Wicken Mere in April (*Cambridge Bird Club Report 1957*).

1958. Three pairs bred at Cambridge sewage farm and one pair at another locality (*Cambridge Bird Club Report 1958*).

1959. Four pairs bred at the sewage farm and a pair nested at each of two other sites, one of them a new locality (*per* A. E. Vine).

BEDFORDSHIRE

Nested 1951, 1956 and as under.

1957. Three pairs bred at one gravel pit; at another pit two pairs were seen and one pair certainly nested (*Bedfordshire Naturalist 1957*).

1958. At least seven pairs were seen at gravel pits and six pairs are known to have nested (*Bedfordshire Naturalist 1958*).

1959. About seven pairs summered, but owing to lack of observation the breeding success is unknown (*per* H. A. S. Key).

HUNTINGDONSHIRE

Nested 1952 and as under.

1957. Two pairs probably nested near St. Ives where five or six flying young were seen on 1st August. In the south of the county, a pair probably made two attempts to nest, the eggs being taken by Carrion Crows (*Corvus corone*) (*Hunts. Flora and Fauna Soc. Report 1957*).

1958. A pair bred successfully at a gravel pit and another pair probably nested at a second (*Hunts. Flora and Fauna Soc. Report 1958*).

1959. Three pairs nested; at one site a nest was discovered with five eggs on 28th June, but it was found deserted on 2nd July (*per* C. F. Tebbutt).

NORTHAMPTONSHIRE

Nesting proved in most years since 1953.

1957. Three, possibly four, pairs bred at two sites (*per* R. Felton).

LITTLE RINGED PLOVERS: 1957-59

1958. Five pairs are believed to have nested, but only one was successful in rearing young (*per* R. Felton).

1959. At least five pairs summered and four pairs bred, including a pair at a new site (*per* R. Felton and M. Goodman).

GLOUCESTERSHIRE

Nested 1953-55.

1957. No records.

1958. Single birds seen at different sites in April, May and August, but no evidence of nesting (*per* C. M. Swaine).

1959. Single birds at two gravel pits in April, but not subsequently; one at a gravel pit on 30th August and 3rd and 6th September (*per* C. M. Swaine).

WARWICKSHIRE

First nesting record 1959.

1957. In one area two were seen on 31st August and one on 3rd September. In another (and new) locality, one was seen on 22nd September (*per* J. Lord).

1958. Two adults and two juveniles frequented the new locality mentioned above in July. The juveniles were capable of weak flight when first seen in early July, so breeding was not proved although highly probable. Single birds seen in another area on dates between 4th and 15th May (*per* J. Lord).

1959. Certainly three, probably four, pairs bred in one area and one pair in another. These are the first definite breeding records for the county (*per* J. Lord *et al.*).

STAFFORDSHIRE

Nested 1952.

1957. A pair was seen at a gravel pit during June, but there was no evidence of breeding. One or two at Cannock and Blithfield Reservoirs on autumn passage (*per* J. Lord).

1958. A pair at a gravel pit during May and June was not proved to be breeding. One or two seen at reservoirs in spring and autumn (*per* J. Lord).

1959. Occasional birds seen on passage in April-May and July-September with maximum of six at Blithfield Reservoir on 27th July and 12th August (*per* J. Lord).

LINCOLNSHIRE

Has nested annually since 1950.

1957. One pair summered at the original site and two pairs at another site in the same area (*Lincolnshire Bird Report 1957*).

BRITISH BIRDS

1958. Four pairs attempted breeding and a fifth pair stayed the summer (*per* A. D. Townsend).

1959. About five pairs summered, at four sites, and at least three pairs nested (*per* A. D. Townsend).

LEICESTERSHIRE

Has nested annually since 1955.

1957. Four pairs attempted breeding; two nests were destroyed by flooding at one site, but two clutches hatched successfully at another (*per* R. A. O. Hickling).

1958. Three pairs bred successfully (*per* R. A. O. Hickling).

1959. At least three pairs bred successfully (*per* R. A. O. Hickling).

NOTTINGHAMSHIRE

Nested 1956 and as under.

1957. Four pairs were present in the breeding season and two pairs probably bred. Increased numbers were noted on passage in the autumn (*Report on the Birds of Nottinghamshire 1955-1957*).

1958. Two pairs bred successfully. On passage there were 18 records of one to two birds from 4th April to 3rd June and 27 records of one to three from 12th July to 21st September (*per* A. Dobbs).

1959. Two pairs nested. On passage, one to six were seen at localities in the Trent Valley from 5th July to 22nd August (*per* A. Dobbs).

DERBYSHIRE

Nested 1950, 1956 and as under.

1957. At least three pairs attempted to nest with unknown success. One at Barbrook from 29th May to 6th June was the first in the Peak District (*Derbyshire Bird Report 1957*).

1958. Seven pairs summered at five sites and all are believed to have bred; eight young were caught and ringed (*per* D. R. Wilson).

1959. About four pairs summered; one pair certainly nested and four chicks were ringed, two other pairs may have nested (*per* D. R. Wilson).

CHESHIRE

Nested 1954.

1957. One at a sandpit near Northwich in June (*Merseyside Naturalists' Association Bird Report 1957-1958*, *per* E. Hardy).

1958. One at ironworks pool on Cheshire/Flint border on 8th August and 24th-31st August (*Merseyside Naturalists' Association Bird Report 1958-1959* and *per* T. H. Bell).

1959. No records received.

YORKSHIRE

Has nested annually since 1947.

1957. Five pairs bred in one area and in two other areas breeding by a single pair was suspected (*Y.N.U. Orn. Report 1957*).

1958. At least seven pairs nested in three areas (*Y.N.U. Orn. Report 1958*).

1959. Eight pairs reared young and two more probably did so (*per* R. Chislett).

SUMMARY

The status of the Little Ringed Plover (*Charadrius dubius*) during 1957-59 is given year by year for each of the 24 counties in which it has bred (largely south-east of a line from the Wash to the Severn, apart from Lincolnshire and Yorkshire). In 1959 nearly 100 pairs bred, but since 1956 Warwickshire is the only new county colonised. Passage records included a few in the west and exceptional numbers around London.

Studies of less familiar birds

109. Black Wheatear

By I. J. Ferguson-Lees

Photographs by M. D. England

(Plates 64-67)

THE BLACK WHEATEAR (*Oenanthe leucura*) has a very restricted range in south-west Europe and north-west Africa. In Europe it is confined to Portugal, the southern three-quarters of Spain (including the Balearic Islands) and the small part of south-eastern France and north-western Italy between Marseilles and Genoa (thus particularly associated with the region of the Riviera and the Maritime Alps); it probably does not now breed in Sardinia or Sicily (*cf. The Handbook*). The African population, regarded as a separate race *syenitica*, is found from the Rio de Oro and Morocco to Algeria, Tunisia and Tripoli. The species as a whole is largely resident, apart from moving down from the higher ground in winter, and so it is not surprising that it has seldom been recorded outside these areas. Only four British occurrences are now accepted (see Hollom 1960). Being a rather shy bird with such a limited range, this species is familiar to comparatively few ornithologists and has not received much serious study; indeed, hardly anything of significance has been published about it since *The Handbook* appeared over 20 years ago. The scattered observations which make up this text may therefore be of some value and it is hoped that they and M. D. England's excellent photographs may

perhaps encourage others to watch a most attractive and interesting bird.

The Black Wheatear breeds at all levels from the coast to about 6,500 or 7,000 feet, though the African form is particularly associated with the foot-hills at the edge of the Sahara and the stony lower slopes of the Atlas Mountains. In the region of Almeria in Spain, where these photographs were taken, it nests from near the sea to a considerable height in the mountains and, though in some other parts of southern Spain one finds it chiefly as a mountain bird, this is probably because there are fewer suitable habitats lower down. It is much less catholic in its choice of breeding place than any of the other European wheatears. The common species (*Oe. oenanthe*) is found in a variety of sites from mountains and moors, broken ground, downland and cultivated fields to seacliffs, dunes and shingle, while the Black-eared Wheatear (*Oe. hispanica*) occurs in both rocky mountain country and on grassy hillsides dotted with bushes and trees (including vineyards and rough cultivation). In the latter group of habitats the Pied Wheatear (*Oe. leucomela*) may also be found, though it is perhaps chiefly a bird of rough stony ground, low cliffs and river banks. The Black Wheatear, on the other hand, is exclusively found in barren rocky places, such as cliffs, gorges, bolder-strewn plateaux and rocky foot-hills at the edges of deserts. Trees and sparse ground cover may not be far away (plate 65a), but, generally speaking, the bulk of the breeding territory is bare and stony (plate 66a). In Europe at least its numbers are not high in most areas, though locally in Spain it is reasonably common. Other wheatears, particularly the Black-eared in Spain, live in the same places, but there is little evidence of the competition that there seems to be between the smaller species (between *oenanthe* and *hispanica*, for example). This may be because the Black Wheatear is a much bigger bird that is capable of handling larger prey and of taking over nest sites in vertical cliffs which would be unsuitable for the smaller species.

Let us look more closely at the questions of food and nest site. In the literature it is assumed that Black Wheatears live mainly on insects because the other European species are largely insectivorous. In *The Handbook* the information on food is admitted to be sparse, but insects such as ants, flies, beetles and grasshoppers are nevertheless the only examples given. In fact, however, our own rather scrappy observations suggest that quite a lot of non-insect food is taken, as one would expect with a largely resident species that has to maintain itself in places where insect food is not overplentiful in winter. At Almeria, England found that grasshoppers were the prey most frequently taken to the nest (plate 66b), but that scorpions—usually with the tail removed—were a close second. Lizards of various sizes were also brought and two of those noted were large enough for their

tails to trail on the ground when the parent birds were gripping them by their necks (even these were apparently swallowed whole by the young, however, because the visits of the parents to the nest were still only momentary). Among the other foods he recorded were berries from a thorn bush (plate 66b) (with which Black-eared Wheatears were also seen feeding their young). In 1959, in the Sierra de Cazorla nearly a hundred miles north of Almeria, I also saw a Black Wheatear with a lizard and another taking berries, I presume of *Berberis hispanica* though unfortunately I failed to make a note of this. The habitat there was a jagged limestone plateau with patches of thin grass and a sparse scattering of flowers and such shrubs as this barberry and hawthorn, rose and juniper. Thus insects large and small are apparently supplemented by a number of other animal and vegetable foods.

The nest is rather an interesting affair. The site may be any large enough hole in either natural rock or man-made walls. At Almeria, England found the species nesting in a fissure in a sandy cliff, on a ledge in a mountain cave and in ruined buildings in a mountain village (plates 66a and 65b)—buildings that had, incidentally, been the scene of fighting in the Spanish Civil War (plate 67a)! The size of the hole may vary considerably. A nest with five eggs on 3rd May 1957, in the limestone mountains above Ubrique, Spain, was in a hole 7 feet 2 inches above the ground and just over the entrance to a cave. This hole was 18 inches deep and the entrance was just over 6 inches high and over 8 inches wide; inside, the maximum width was over 10 inches and the cavity extended upwards so that there was a space of 22 inches above the nest. By contrast, another nest with five eggs on 15th May 1959, this time in the Sierra de Cazorla, was in a really tiny hole, so small that it was impossible to do more than get one's fingers in to touch the eggs; the outside edge of the nest was only 2 inches from the entrance, the back of the nest was against the back wall, and there was barely enough space for the sitting bird beneath the roof. This hole was 10 feet above the floor of a wide shelf on a steep mountain slope; it was in a vertical limestone face just above a deep recess formed by an overhang. Its position was thus comparable to the nest near Ubrique and, at least in some parts of Spain, a hole over a recess or the entrance to a cave is much favoured. Presumably such a site affords protection against ground predators.

The size of the hole has some bearing on the feature of the Black Wheatear's nesting which has always attracted most attention. Usually, but by no means invariably, the bird builds a low wall or breastwork of stones across the entrance. To describe this as a "wall" perhaps conveys the wrong impression, for it is really no more than a loose heap of dry stones. An average "wall" may be 3 or 4 inches wide and extend back for a greater distance, gradually petering out

at the bottom of the slope as single, scattered stones. There may be only one or two stones altogether—in the cases of the two nests just described there were respectively 17 and about half-a-dozen—or there may be very large numbers. Bannerman (1954) says that Admiral Stenhouse once found a nest in Andalusia with over 200 stones, while L. H. L. Irby in his *The Ornithology of the Straits of Gibraltar* describes a wall that was 9 inches long, 9 inches deep and $2\frac{1}{2}$ inches high—a wall that contained no less than 282 stones with a further 76 in the foundation, making a total of 358! I suspect that such numbers are the accumulation of several years. Certainly the heap is added to when sites are used for more than one year. The largest of the 17 stones at the 1957 nest at Ubrique measured $41 \times 34 \times 10$ mm.—roughly $1\frac{1}{2}$ inches long and wide and half an inch thick. Stones of this size must be quite a burden to a bird which probably weighs less than 3 ounces itself.

Various suggestions to account for this wall of stones were put forward in the old literature. Some people thought that it might be erected to discourage predators and others subscribed to the more popular theory that the pebbles help to shield the sitting bird and her young from the driving wind, rain or dust which can be unpleasant features of the mountains of Mediterranean countries in the early summer. But these walls can be little protection against the weather and virtually none against most predators; the tendency for the chosen holes to be in vertical faces and often above overhangs is a much better guard against animal raiders, and stones are collected even in areas where most sites are well sheltered. In fact, I believe that the collection of these stones plays quite a part in the nest-site selection and courtship of a species which has fairly elaborate sexual displays. The stones are collected by the male and evidently mainly from the ground immediately beneath the nest. As a result of this, one of the nests examined by England had a wall made of lumps of plaster because the site was in a ruined building and plaster was scattered on the floor. I have watched a male take three stones in quick succession up to a hole that was apparently later discarded as a nest-site. Each stone was large enough to be plainly visible in his bill and it was evidently a struggle for him to carry them, judging by his rapidly beating wings. The female was feeding quietly on the ground beneath the hole and the male preceded and followed this stone-carrying with a burst of the characteristic song-flight and a curtailed version of his display dance at the nest entrance (both of which are described in *The Handbook*), after which he stood for nearly five minutes at the mouth of the hole. This same male on another occasion carried a small twig to the mouth of the nest and placed it there, while at another nest in 1957 I found half-a-dozen little sticks up to 95 mm. ($3\frac{3}{4}$ inches)

long among the stones of the wall: the sticks were too thick and inflexible to be used in the nest and these two observations lead me to believe that twigs are an occasional substitute for the stones.

The nest itself is usually made largely of dead grasses with a certain amount of other vegetable matter; and, though most reference books mention a substantial lining of hair, wool, feathers and so on, those that I have examined and the ones seen by England at Almeria have had only a very scanty inside covering of rootlets and of these softer materials. As one would expect, the nest is somewhat larger than that of *Oe. oenanthe*: the diameters of the cups of two nests with fresh eggs were 70 mm. and 69 mm. (about $2\frac{3}{4}$ inches). Such details as are known of clutch size and incubation are given in *The Handbook* (II: 166 and 168). The male spends very little time at the nest once the eggs have been laid, apart from accompanying the female back to it after she has been off to feed; certainly I have no evidence that he plays any part in incubation. The female is less difficult to flush direct from the nest than are female Wheatears and Black-eared Wheatears, but she will come off only if the vicinity of the nest-hole is tapped. In the early stages of incubation the male calls her off the nest when anybody approaches. Both male and female feed the young and remove faeces and at the nest where these photographs were taken the cock did so the more frequently, though this may have been due to this particular hen's nervousness at the hide; the feeding rate was noticeably spasmodic—about six feeds at intervals of a few minutes followed by something like an hour's rest. Both birds announced their arrival near the nest by singing (see below) and the young kept up a loud wheezy and querulous note all the time the parents gave any indication of being in the vicinity. As with other wheatears, the young appear to leave the nest when little more than two weeks old—unnecessarily early, it would seem, for a well protected hole-nester. England commented on the surprisingly undeveloped and short-tailed state in which the young Black Wheatears were leaving the nest in the Almeria region.

The Black Wheatear needs little description and its main features are emphasised in the caption to plate 64. Note, however, that it is not simply a black edition of our Wheatear. This point needs to be made because there have been several cases in recent years of confusion over birds that have been either melanistic Wheatears or ones that have become many shades darker through nesting near the soot or coal of industrial chimneys. The Black Wheatear is really very much bigger. Its total length approaches a quarter as much again as any of the other European wheatears and at the same time it is a much bulkier and more thrush-like bird that at some angles recalls a small Blackbird (*Turdus merula*) rather than just a large wheatear. The white under-tail is

quite conspicuous and should strike one without being looked for specially (plate 64) from the side the black tip to the tail seems completely divorced because the white extends right round the base. The female being just a slightly duller and browner edition of the male, the two sexes are much more similar than in other European wheatears and can be difficult to distinguish in the field, especially when apart. As already mentioned, the Black Wheatears of north-west Africa are separated as a different race, *syenitica*, on the grounds that the black markings at the end of the tail are broader and that the body plumage of both male and female is browner. However, these characters are not very constant and, for example, a comparison of the patterns shown in plates 66b and 67a (male) and 67b (female) with the diagrams in *The Handbook* (II: 167) will show that the female in particular of this pair had tail markings almost as heavy as in the North African race.

The full song is quite unlike the songs of most wheatears with their rather lark-like notes. It is a warble very reminiscent of that of the Blue Rock Thrush (*Monticola solitarius*) though actually shorter and less sweet with something of the quality of that of an Orphean Warbler (*Sylvia hortensis*); it also tends to be interspersed with chattering notes. It may be delivered from a rock or in the pipit-like display flight already mentioned. The sub-song, used chiefly in the vicinity of the nest and probably partly an expression of conflicting emotions, is uttered by both sexes. England noted that both birds at the nest he photographed used this song as they approached, often with a beakful of food: he described it as a scratchy warble with musical interludes and reminiscent of the song of the Whitethroat (*S. communis*), that of the female being briefer and more interspersed with raucous alarm notes. Early in the breeding season, before the eggs are laid or during incubation, some or all of the birds of adjacent pairs may be watched during territorial disputes in which an insistent and high-pitched note *peeee*, often repeated, is much used. A shortened version of the same note, rapidly repeated as a piping *pee-pee-pee-pee*, is uttered as an alarm, sometimes interspersed with a typical wheatear *chack*. The white tail is continually spread with a bobbing action at these times. As with other wheatears, short flights from one prominent perch to another, jerky movements and a restless darting to and fro are regular features. The male spreads both tail and wings to show the white to full advantage during his ledge display.

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Notes on the behaviour of Whiskered Terns

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INTRODUCTION

THE FOLLOWING OBSERVATIONS were made at a colony of Whiskered Terns (*Chlidonias hybrida*) at La Tour du Valat in the Camargue, France, during the summer of 1959. My first visit to the colony was on 29th June, by which time there were already some young ones. I thus missed much of the early reproductive behaviour, but even at this date there were still some pairs with incomplete clutches and so observations could be made on most aspects of behaviour during incubation. In addition, I have included a few records made earlier by members of the staff of the Station Biologique de la Tour du Valat and any references to events before 29th June are based on these.

My notes as a whole are fragmentary and incomplete, but are interesting to compare with the very full study of the behaviour of the Black Tern (*Ch. niger*) by Baggerman, Baerends, Heikens and Mook (1956) in Holland. Throughout the following text my observations are presented against theirs and all references to the behaviour of the Black Tern relate to that paper, the terminology of which I have also followed. I was not able to distinguish the sexes of the birds I watched.

THE COLONY

The colony studied consisted of about 150 pairs and was situated in a fresh-water marsh almost completely overgrown with *Scirpus maritimus* (bulrush), *Myriophyllum spicatum* (water-milfoil), *Potamogeton pectinatus* (pondweed) and *Ranunculus baudotii* (crowfoot) (Fig. 1). The nearest nests were about 50 metres from the edge of the marsh and the depth of water in the part occupied by the colony was 60-80 cm. (between 2 feet and 2 feet 8 inches) in the middle of July. The colony stretched over an area of about one hectare (2.47 acres), but the nests were in distinct groups within this area. The most compact group comprised 11 nests, the average distance between which was 220 cm. (about 7 feet 4 inches) and the minimum 100 cm. (about 3 feet 4 inches). Nests at less than about 100 cm. from one another, which have been recorded in the Camargue in previous years, seem to be at a disadvantage (see under REPRODUCTIVE BEHAVIOUR below). The other groups in the colony were more widely spaced and a number of nests belonged to no particular group at all. It should be added here that most of

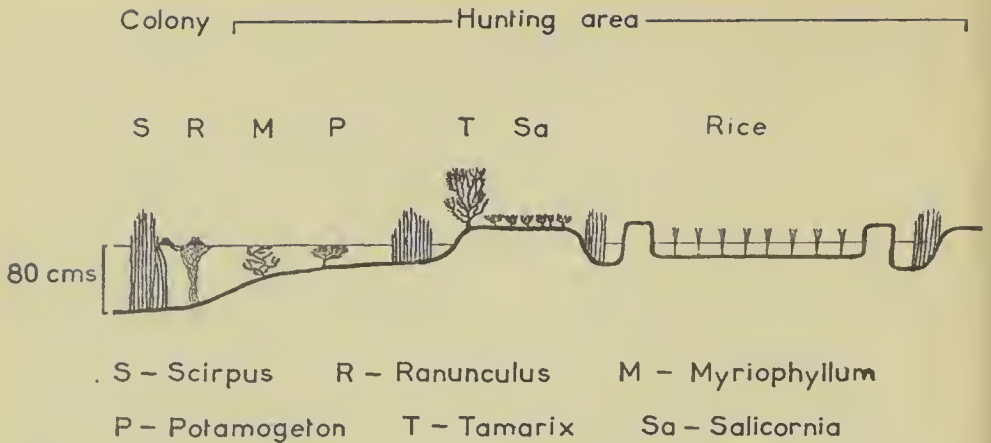


FIG. 1. The nesting and feeding biotopes of Whiskered Terns (*Chlidonias hybrida*) in the Camargue. The nests are loosely constructed of stems of bulrush (*Scirpus*) and are either floating on the water or on clumps of vegetation, often crowfoot (*Ranunculus*) (see below). The birds feed mainly in the rice-fields and in the shallow parts of the fresh-water marshes where they are up to about a foot in depth and largely overgrown with water-milfoil (*Myriophyllum*) and pondweed (*Potamogeton*) (page 562)

the Black Tern colonies watched by Baggerman and his colleagues in Holland numbered less than 15-20 pairs.

Whiskered Tern nests are very loosely constructed heaps of *Scirpus* stems, either floating on the water or on clumps of vegetation (often *Ranunculus*). They are gathered together without any real attempt at building, and they disintegrate very easily. They are added to throughout the season (see under INCUBATION below). Lomont (1945) considers that an essential condition for the establishment of a colony is the presence of herds of bulls or horses which, in passage and while feeding, leave many torn and broken reeds in the marsh. These are picked up by the terns for use in constructing their nests and Lomont believes that the birds are not strong enough to tear up the reeds themselves. However, Whiskered Terns nest in other areas (such as the Dombes in France) where there are no wild bulls or horses and those in the Camargue can be seen trying to pick up growing reeds, sometimes with success. Thus, while the terns in the Camargue make full use of reeds torn up by bulls and horses, the presence of these animals cannot be considered essential.

The only other birds nesting in the vicinity of the tern colony in 1959 were two pairs of Coots (*Fulica atra*).

SEASON, CLUTCH-SIZE, INCUBATION AND FLEDGING

In 1959 the Whiskered Terns occupied the colony from about 20th May onwards and the first egg was laid on 1st June. The following data on clutch size, incubation and fledging are based on observations

and nest-records at about 70 nests. Three eggs form the normal full clutch, and the occasional instances of four eggs probably involved two females. A few first clutches were of two eggs, however; later in the season the proportion of clutches of two eggs was higher and these were thought to be replacements. Eggs are laid on consecutive days and incubation begins when the clutch is complete. Male and female take equal shares in incubation and sit in turn for periods of about 25 minutes. The time between the laying of the last egg and the hatching of the first chick is 18-21 days, and the hatching of each brood is normally spread over about 24 hours. The young stay in the neighbourhood of the nest for the first week or so, taking refuge in adjacent clumps of bulrush whenever an intruder approaches. After this period they move from the immediate vicinity of the nest and wander until they are able to fly, three to four weeks later.

In the colony as a whole there was little synchronisation of breeding dates and eggs were found at any time from the beginning of June to the beginning of August. But within any single group the laying and hatching dates at the various nests were closely related. Thus, in the first part of the colony to settle down, 16 clutches were started in the period 1st-3rd June and these had almost all hatched by the 25th. On the other hand, a count of several groups on 4th July showed that 35 out of 59 nests had full clutches, while five had incomplete clutches, six had both eggs and young and were thus hatching, and 14 had young only. In another compact group all 11 nests hatched between 8th and 14th July; and in the most backward group (probably chiefly replacements) there were still six pairs with eggs and three with very small young on 23rd July, by which date many of the earliest young had been on the wing for more than a week and were already flying several kilometres to hunt.

This similarity of dates in any one group is probably the result of social stimulation. The close proximity of other birds displaying and threatening ensures that in each individual and in each pair the processes leading up to copulation and laying are synchronised. It seems that synchronisation is very effective in a group, and remarkably ineffective in the colony as a whole. It may be that a long breeding season has survival value in preventing too much competition in a species whose food seems to be available in much the same quantities throughout the summer. Many more data are clearly needed before these suggestions can be verified, however, and in particular the position of replacement clutches should be investigated.

FOOD AND FEEDING BEHAVIOUR

The food of the Whiskered Terns was not studied in detail, but incidental observations were made from hides and outside the colony.

Schifferli (1955) lists a small number of food items from the Camargue, including Marsh Frogs (*Rana ridibunda*), tadpoles, dragonflies and aquatic larvae of various sorts. In addition to these, I recorded two small Carp (*Cyprinus carpio*). The dragonflies are taken while at rest on the surface of the water.

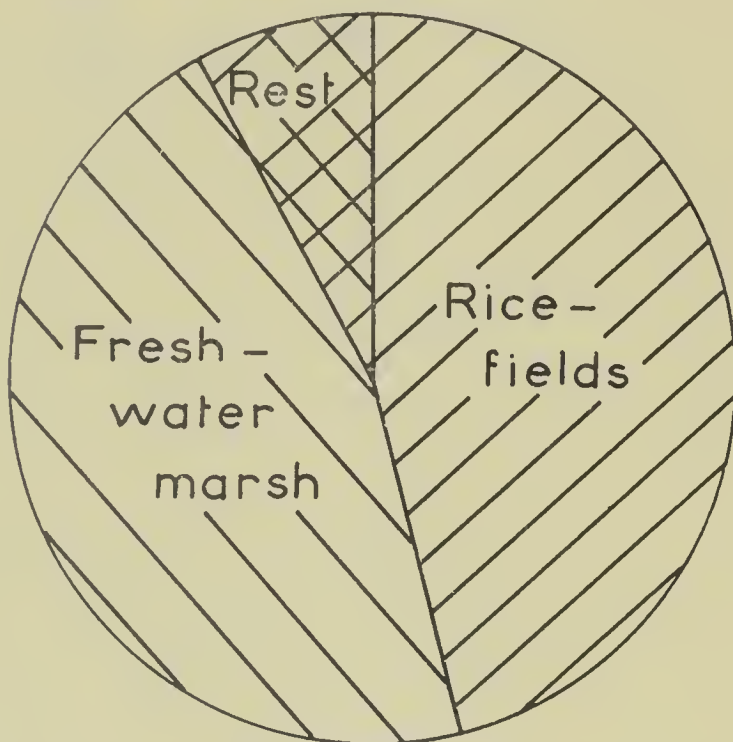


FIG. 2. The approximate comparative importance of the main feeding biotopes of Whiskered Terns (*Chlidonias hybrida*) in the Camargue (see below)

The terns fed regularly up to 4 km. (about $2\frac{1}{2}$ miles) from the colony, and in large numbers at $2\frac{1}{2}$ km. (about $1\frac{1}{2}$ miles). The two main hunting areas were rice-fields (especially in the early stages when the rice was not too thick) and shallow parts of fresh-water marshes such as the one in which the colony was situated (Figs. 1 and 2). In the latter areas the terns hunted chiefly in places that were not more than about 30 cm. (one foot) in depth. Odd birds were occasionally recorded hunting in other biotopes, such as shallow canals, and once or twice I saw individuals on the dry ground, among the *Salicornia* (glasswort), where they seemed to be looking for food.

Baggerman and his colleagues remark that it is rare to see a Black Tern hunting alone. It is quite common to find Whiskered Terns hunting singly, but more usually these birds are grouped into definite

flocks which fly up and down together searching for food. They hunt in much the same manner as Black Terns, beating upwind low over the water, turning to fly high and quickly downwind, and turning again to repeat the process.

Schifferli (1955) mentions that Whiskered Terns almost always catch their food by plunge-diving (*Stosstauchen*), and this I can confirm. It is interesting in view of the fact that Black Terns seem always to swoop to the water. Whiskered Terns use both methods, but with them I have found swooping unusual. Dr. J. M. Cullen (*in litt.*) says that Arctic Terns (*Sterna macrura*) and Common Terns (*S. hirundo*) use both methods of feeding, depending on the depth of the water and the nature of the food. It should be remembered that there is a considerable difference between the bills of Whiskered and Black Terns (Fig. 7), which may well indicate differences in feeding methods.

OTHER ASPECTS OF NON-REPRODUCTIVE BEHAVIOUR

Whiskered Terns bathe quite often, sometimes immersing themselves completely in the water, shaking wings and head vigorously. This may be done in flight or after landing in a shallow pool of water. Black Terns appear to bathe less vigorously, dipping head and breast in the water while flying low. Bathing should not be confused with food-washing, an activity already recorded in several other species of terns. Whiskered Terns also sometimes wash their prey, both in flight and when perched on the edge of the nest.

In the same way as Black Terns, Whiskered Terns have rest-places, both temporary and more permanent. These are outside the colony itself and may even be as much as one or two kilometres away. At the rest-places birds preen, sleep and wash. I did not spend enough time watching such sites to see whether any reproductive activities were carried out there.

When a potential predator approaches the colony, all the terns fly up together, uttering the *kiriri* alarm call, and mob the intruder in a close flock, sometimes swerving round it in a "whirl-flight". However, easily the main predators on the Whiskered Tern colonies in the Camargue are Marsh Harriers (*Circus aeruginosus*) and this rarely has any effect against them. I also noted the terns reacting in this way to Black Kites (*Milvus migrans*) and once to a Herring Gull (*Larus argentatus*). Humans in the colony are mobbed, but no whirl-flight is performed.

REPRODUCTIVE BEHAVIOUR

High-flight

Baggerman and his colleagues have described in detail the "high-flight" of the Black Tern, in which a flock of between two and about twenty

birds ascends high into the air, flying with faster and jerky wing-beats. After splitting into groups of two or three, the flock levels out and then each group glides straight down on still wings, shooting up at the end of the glide just above the water or land. This flight is performed mostly during the period before nest-occupation, and only rarely after the start of incubation. It is thus chiefly a part of the pairing behaviour.

Although my observations on Whiskered Terns did not start until some way through the breeding season, this was so extended that there were still pairs at all stages, as already pointed out, and probably some unmated individuals as well, so that I was able to observe high-flights on numerous occasions. My observations do not permit too many generalisations, but it is apparent that there are some differences between these flights in the two species, although the essentials are the same.

In Whiskered Terns high-flights may sometimes include almost the whole colony. Thus on 11th July 1959 I watched a performance by about 300 birds; this at a time when a large number of pairs already had young. In this respect it is interesting to note that, while studying the North American race of the Black Tern (*Ch. n. surinamensis*), Cuthbert (1954) observed high-flights by almost the whole colony, followed by what was presumably the glide.

The high-flight of Whiskered Terns begins as several birds take off or stop feeding and join together. The number of performers may range from one to (as already remarked) almost the whole colony. The birds, calling a harsh *kiriririck* and occasionally a harsh and short *kek*, rise together in a tight group, sometimes to a height of 300 feet or more. They fly in a slightly unusual manner, beating their wings faster and more deeply than they normally do, so that a rather jerky action results. Some do not stay with the flock right to the top, but glide down earlier. The close flock splits up during the ascent or while levelling out or circling. The birds then glide down with stiff wings—sometimes straight down in the way that Black Terns do, and sometimes in spirals. At the bottom of the glide, which is often very fast, some shoot up in short, steep climbs to glide down again. Some may glide for as long as seven or eight minutes after the majority have returned to the colony. The whole glide is very quiet in comparison with the noisy ascent and it may well be that the birds do not call at all during it.

It is thus evident that the high-flight of the Whiskered Tern is very similar in general performance to that of the Black Tern. The whole activity is a part of the reproductive behaviour of the species. A comparable ascent and glide has been recorded in all terns so far studied, although there seems to be some difference in timing in the various species.

Fish-flight

The other aerial display common to most species of tern, the fish-flight, was not observed. My observations probably started too late in the season.



FIG. 3. The stooping posture of the Whiskered Tern (*Chlidonias hybrida*) with head down and tail raised. This is adopted on the nest by the incubating bird when its mate arrives and is sometimes accompanied by a soft crooning note (see below)

Stooping

The incubating bird sometimes "stoops" on the nest when the non-sitting bird arrives (Fig. 3). In Black Terns this movement is seen especially in the period between nest-occupation and the end of laying. A less intense form, probably corresponding to that which I saw among the Whiskered Terns, occurs during incubation.

In the Whiskered Tern the stooping posture is sometimes accompanied by a soft, low, crooning note, *kura-kura-kin*. This, although slightly different in form, would seem to be homologous with the cooing note of the Black Tern, as it is also used in calling the young back to the nest.

Erect posture

During incubation a bird arriving at the nest sometimes adopts an "erect" posture if the other member of the pair is present. In this it stretches its neck upwards and forwards; its bill may be in any position from just below the horizontal to an angle of about 50° above it (Fig. 4). A bird which has just landed also often keeps its wings lifted. The position is sometimes adopted by both members of the pair and they do not then stand face to face, but half sideways to each other.

In Black Terns the movement is very similar and is seen most commonly before the beginning of incubation. During incubation it occurs less and less, and it ceases after hatching.

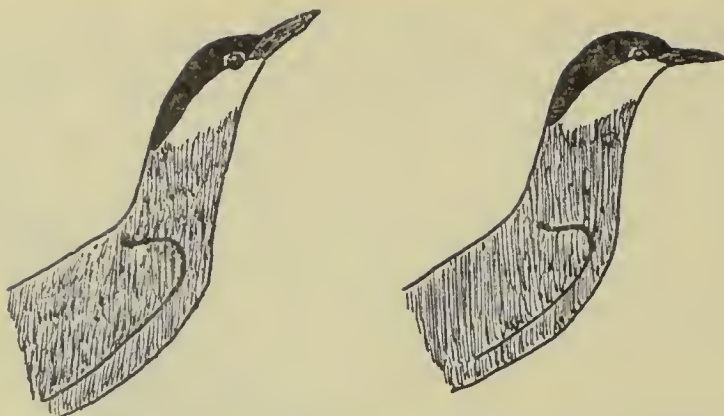


FIG. 4. The erect posture of the Whiskered Tern (*Chlidonias hybrida*) with neck stretched forwards and upwards and the bill at any angle from just below the horizontal (*right*) to about 50° above it (*left*). This may be adopted by the non-sitting bird when it arrives at the nest and then sometimes by the pair together (page 565)

Agonistic activities

Aerial chases in the colony are common and these sometimes develop into real fights. When threatening another in the air, a Whiskered Tern stretches its neck and head upwards (Fig. 5) and utters a high-pitched, loud *kwee*.

Incubating Whiskered Terns often threaten other terns flying in the neighbourhood. The distance within which strange birds are tolerated varies greatly, however, and on some days those flying past as much as five metres away may be threatened. When threatening another from the ground, a Whiskered Tern uses a hard, sharp *ku-ku* note. At the same time it may stretch its neck upwards and forwards, or it may retract it. It holds its wings slightly out from its sides and on one occasion I saw a threatening tern actually lift its wings. It ruffles the feathers of its crown, cheeks, nape, breast and occasionally upper wing-coverts and back; the ruffling of the white cheeks brings out the contrast with the black crown. Its head always faces the intruding tern.

It is noticeable that there is much more threatening between neighbouring nests after hatching than during incubation. This may be because there is far more coming and going when young are being fed. At nests which are less than about 100 cm. apart, the owners apparently spend so much time threatening and chasing each other that the chicks do not receive very much attention. Dr. L. Hoffmann tells me that he has observed a case where a brood was lost because of this, and it is possible that such losses may be quite frequent where nests are as close together as that.



PLATE 64. Male Black Wheatear (*Oenanthe leucura*) by nest-hole in wall of ruined house (plates 65-66), Spain, May 1960. Much the biggest European species, it is a slightly glossy black with a typical wheatear pattern on rump and tail, but the white also extends to the under tail-coverts (pages 553-558) (photo: M. D. England)

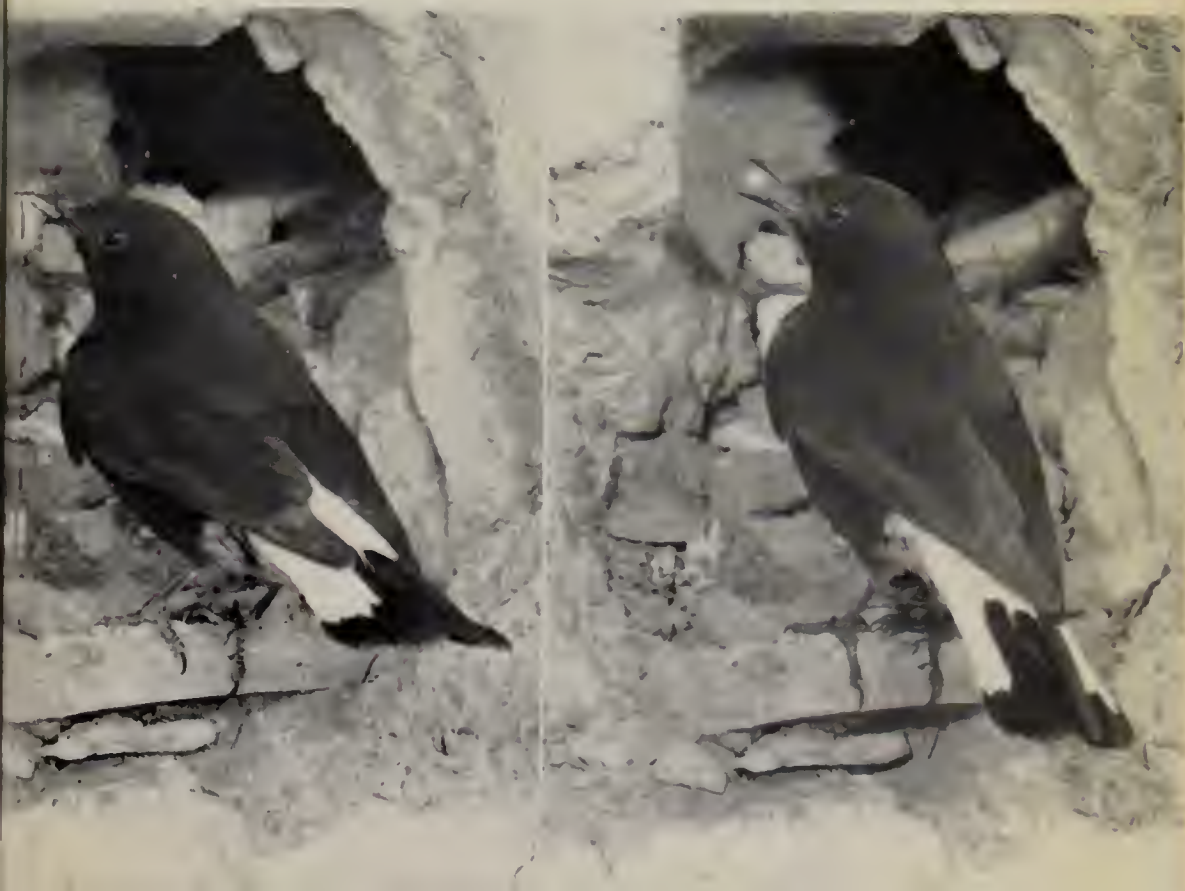


PLATES 65 and 66. Habitat of Black Wheatears (*Oenanthe leucura*), Spain, May 1960. These retiring birds nest in rocky plateaux, foot-hills, cliffs and gorges from sea-level to over 6,500 feet. Though such trees as oaks and hawthorns—and here palms and prickly pear—may not be far away (top left, view from the nest area), the





breeding territory is normally among barren rocks with little cover (top right). This nest was in an inside wall of the ruined house, in the furthest of the upper row of holes (bottom left). Below, male with a grasshopper (here the commonest food) and a berry; lizards and many scorpions were also taken (page 554) (*photos: M. D. England*)



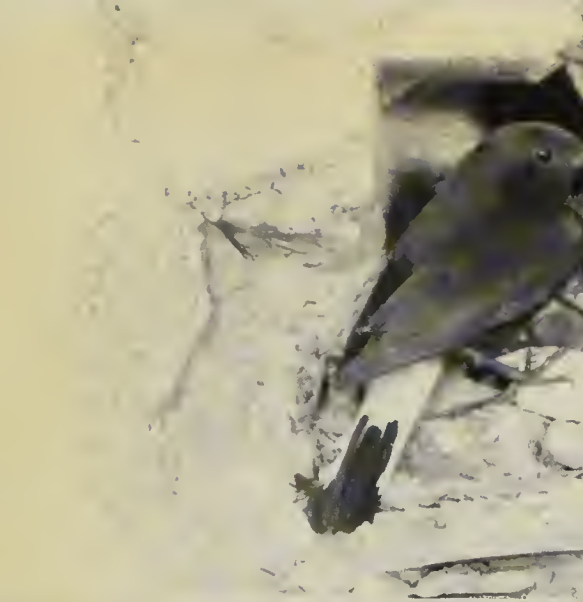


PLATE 67. Black Wheatears (*Oenanthe leucura*), Spain, May 1960, male above and female left and below. She is a duller and browner black and in this case, as can be seen, her tail-pattern was slightly different. Note the thrush-like stance below: they can look very like small Blackbirds and seem almost as big. The nest was about a foot in and made of coarse grasses with a finer lining. Note the stones forming a wall at the entrance: these are collected by the male, chiefly just below the site, and some are surprisingly large and heavy for a bird of this size; as many as 350 have been recorded at one nest (page 556). One of a number of bullets that were embedded in the walls of the ruined cottage (page 555) can be seen in the bottom right-hand corner above (photos: M. D. England).

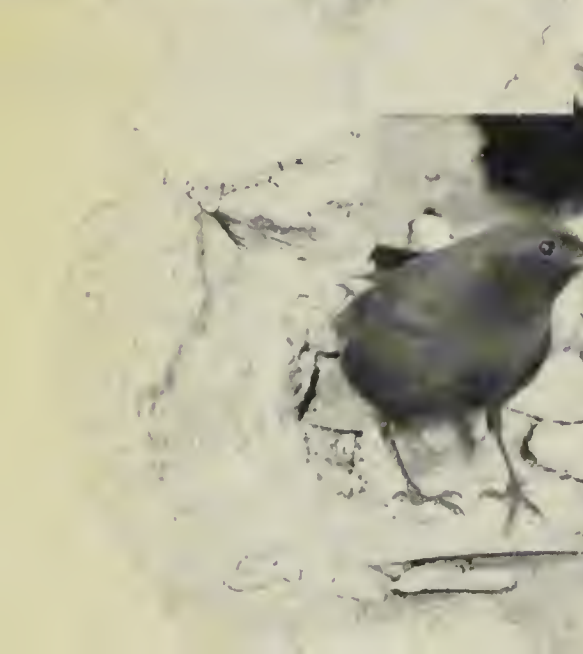




FIG. 5. The posture of a Whiskered Tern (*Chlidonias hybrida*) threatening another in the air. Its head and neck are stretched upwards and it utters a loud and high-pitched note (page 566)

Hovering

As with Black Terns, Whiskered Terns hover for a short time before alighting on their nests or elsewhere. At the same time the *kee-kee* flight call changes to a harsh *ku-ku* which is very similar and perhaps identical to the threat call. It is possible that hovering birds have both attack and escape motivation, and that the hovering call is, in fact, a plain threat.

BEHAVIOUR DURING INCUBATION

Swerve-flight

As happens with many other species of terns, all the incubating birds in the colony sometimes suddenly fly up together perfectly silently and go some distance very low above the water, swerving from side to side. After a short period they start calling again, the flock breaks up and the birds return to their nests.

Nest relief

There is no fixed ritual of nest relief in Whiskered Terns, and the change-over is often effected without any ceremony at all. The relieving bird not unusually adopts an erect posture and occasionally the sitter does likewise. The relieving bird then sometimes follows with a stoop on the edge of the nest, in which case the other also stoops



FIG. 6. Mutual stooping by Whiskered Terns (*Chlidonias hybrida*) (see also Fig. 3).
This sometimes occurs at nest relief (page 567)

slightly (Fig. 6). This resembles the "mutual stoop" of the Black Tern which, though chiefly a feature of the pre-incubation period, occurs in a less intense form later.

The reliever occasionally carries reeds (and on one occasion I saw a small fish brought). As the sitting bird leaves, it often starts to peck at the outside rim of the nest. Material is then sometimes picked up and thrown back on to the nest with a sideways jerk of the head. The effect of this is to compact the nest by bringing stems from the edge into the centre. After the change-over the bird which has been incubating sometimes stays for a short time on the edge, arranging the reeds there. The Dutch team observed this in the Black Terns they were studying and explained it by supposing that the brooding motivation of the sitting bird is not always completely exhausted when the time comes for the change-over. It is thus brought into a conflict situation that results in displacement building.

Adding to the nest

It was remarked above that during nest relief reeds may be thrown back from the edge of the nest into the centre. The nest is also constantly added to, even after the young have hatched, and throughout the season Whiskered Terns can be seen flying around the colony with reeds in their bills. This reinforcement of the nest is very necessary, for it is little more than a haphazard heap of reeds and it breaks up very easily; so much so that it has usually disintegrated within three or four days of the departure of the young and its ceasing to be cared for. Reeds are occasionally stolen from other nests. Some non-sitting birds have bursts of building activity and bring a large number of reeds to the nest in a short space of time. These are not carefully laid down, but are just dropped, sometimes even while the bird is in flight. The incubating tern often arranges the nest material with its beak.

The fact that Whiskered Terns carry nest material from a distance is of interest since Black Terns do not apparently do so; instead, they

seem to gather theirs from close at hand while they are on the sites of their nests. (I am indebted to Dr. J. M. Cullen for pointing out (*in litt.*) that most of the terns—except the Noddy (*Anous stolidus*)—have lost the habit of carrying nest material.) This should enable Whiskered Terns to nest in more open water than Black Terns can; and my impression from published descriptions of Black Tern colonies is that this is so, although I have never seen one myself. Certainly Whiskered Terns nest at times in very open water where all reeds have to be brought from a distance. Observations should be carried out in mixed colonies such as those on the Coto Doñana in Spain, to see whether this slight ecological difference exists.

FLEDGING

For the first day after it hatches, the chick stays on the nest even when the colony is disturbed. For the next week or so, it remains in the region of the nest but takes refuge in neighbouring clumps of reeds when frightened and, as it grows older, goes further at each disturbance. When danger has passed, the youngster usually returns to the nest of its own accord, but its parents sometimes call it back with the *kura-kura-kiu* note which is normally associated with the stooping position (page 565). Black Terns lure their young back with the corresponding call and adopt the stooping position (or something very like it) at the same time. Unfortunately I did not note whether the parents stooped when calling their young, but Schifferli (1955) recorded what was presumably the stoop in these circumstances. After the first week or so, the young no longer return to the nest but move around the colony being fed by their parents until they can fly.

For the first two or three days, the parents do not seem to recognise their own young and broods are sometimes mixed up at disturbances. After four or five days, however, a chick returning to the wrong nest is chased away by the owners. This suggests recognition, but it may be because the chick behaves differently in a strange nest. It also seems to recognise its parents at about the same time, but again this may merely be a response to an adult's behaving "in the right way".

A chick begs with its bill wide open, showing the orange-red inside of the mouth. Its white chin forms a conspicuous patch against the green nest as it stretches towards its parent, squeaking loudly. I took no detailed notes on the posture, but it seems similar to the Black Tern's.

CONCLUSIONS

Black and Whiskered Terns are fairly similar in appearance, the most obvious differences being the latter's white cheeks and heavier red bill (Fig. 7). On these characters Whiskered Terns seem to represent

a partly intermediate stage between the genus *Chlidonias* and the genus *Sterna*, and in this connection it should be noted that Moynihan (1959) includes *Chlidonias* in *Sterna*. He bases his conclusion on the partly intermediate characters of the Whiskered Tern and on the similarity of the recorded behaviour of the Black Tern to that of the sea terns.

The most noticeable feature of the behaviour of Whiskered Terns, on the data so far available, is its closeness to that of Black Terns. This might be expected in view of the conservative nature of gull and tern behaviour as a whole. Moynihan has pointed out that the primary sexual displays of the Laridae are very similar in almost all species, though primary hostile displays seem to differ greatly. Where two related species (such as Black and Whiskered Terns) are sympatric for part of their range and even form mixed colonies, differences are not as great as might be expected. Isolation seems to be maintained by small distinctions in morphology and voice. Arctic and Common Terns appear to be another species pair which are sympatric without interbreeding. Dr. J. M. Cullen (*in litt.*) believes that they also are kept distinct by slight morphological differences and their calls.

A feature of the behaviour of Whiskered Terns is the timing of the high-flight. Although I made no observations at the beginning of the season, it was obvious that high-flights were fairly common later on. According to Baggerman and his co-workers, Black Terns do not indulge in high-flights much after the completion of the clutch, but I do not think that this represents a real difference between the species. Some of the late season high-flights that I saw by Whiskered Terns may have been performed by unmated individuals, or have been due to a recrudescence of sexual behaviour by pairs with chicks.

Even the hostile displays of Black and Whiskered Terns resemble each other, though the former always threaten with a short neck, while the latter often stretch head and neck towards their opponents. The ruffling of the cheek feathers by Whiskered Terns emphasises the contrast between black crown and white cheeks.

It would thus seem that the most characteristic differences connected with the behaviour of the two species lie in their voices. My observations are not complete enough to make a detailed comparison, but most of the calls of the Whiskered Tern appear to be harsher and for some of them it is difficult to find homologies among those of the Black Tern. Fuller studies of the voice and of the earlier stages of the breeding of the Whiskered Tern are needed and it should also be borne in mind that there may be slight ecological differences as suggested by the Whiskered Tern's retention of the habit of carrying nest material and the distinctions in its feeding methods.

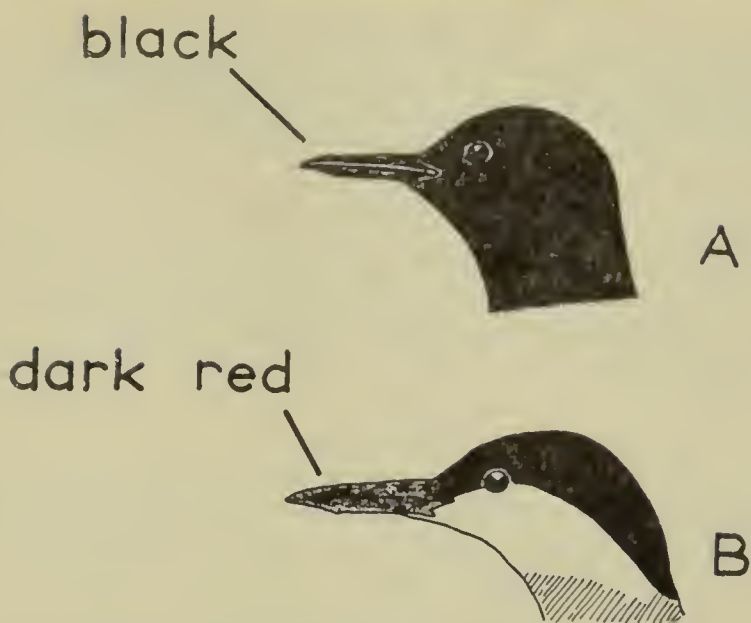


FIG. 7. Heads of (A) Black Tern (*Chlidonias niger*) and (B) Whiskered Tern (*Ch. hybrida*) to illustrate the differences in the size and colour of the bills and to show the white cheeks of the latter species

SUMMARY

(1) Observations were carried out on Whiskered Terns (*Chlidonias hybrida*) in the Camargue, France, in the summer of 1959. Most of the early reproductive behaviour was missed because the work was not started until late June. Comparisons are made throughout with the study by Baggerman *et al.* (1956) of the Black Tern (*Ch. niger*) and the terminology of that paper has been adopted.

(2) The colony studied consisted of about 150 pairs and covered an area of about $2\frac{1}{2}$ acres in an overgrown fresh-water marsh. The nests were in groups and the minimum distance between them was a little over three feet. The full clutch was normally of three eggs. Incubation lasted 18-21 days and was by both sexes equally. There was little synchronisation of breeding dates in the colony as a whole, and hatching in different parts of it was spread over $2\frac{1}{2}$ months. However, in any one group of nests the eggs were laid within a period of about six days and hatched within a similar time.

(3) Whiskered Terns in the Camargue feed mainly in fresh-water marshes and rice-fields. Their usual method of feeding (plunge-diving) seems to differ from that of Black Terns (swooping).

(4) Whiskered Tern nests are loosely constructed heaps of *Scirpus* (bulrush) stems; these are brought from some way away for the purpose. Most other species of terns, including the Black Tern, have lost this habit of carrying nest material from a distance.

(5) The high-flight seemed essentially the same as that of the Black Tern, except that at least in the later part of the season it was sometimes most of the colony that took part. Other behaviour patterns resembling those of the Black Tern almost exactly were stooping, the erect posture, the swerve-flight and the behaviour associated with nest relief. When threatening other individuals, however, the Whiskered Tern, unlike the Black, often stretches out its neck.

(6) The behaviour of Whiskered and Black Terns is thus very similar. The two species are sympatric and in some places form mixed colonies. Apart from possible ecological points, they seem to be kept apart solely by small differences in morphology and voice. A much fuller study is needed to confirm the tentative suggestions put forward in this paper.

ACKNOWLEDGEMENTS

Some of the breeding data in this paper are based on records kept by members of the staff of the Station Biologique de la Tour du Valat. I am also indebted to Dr. L. Hoffmann and Dr. J. M. Cullen for much useful information.

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Notes

Aggressive behaviour of Barrow's Goldeneye with young.—Although Barrow's Goldeneye (*Bucephala islandica*) does not figure on the British and Irish list, the following notes may be of interest as an instance of an aggressive attitude during the breeding season.

From 8th to 14th July 1957, W. J. C. Conn, A. T. Macmillan and I were in camp by a small pool (measuring roughly 200 × 75 yards) on the east side of Myvatn, Iceland. On this pool a female Barrow's Goldeneye had three young, aged between one and two weeks. The ducklings were very independent and spent most of their time foraging about on their own under the banks, while their mother patrolled the centre of the water. On our first morning a female Scaup (*Aythya marila*) alighted on the pool, and immediately the goldeneye swam towards her—body crouched low on the water and eye burning a baleful green. The Scaup evidently recognised this as a threat attitude and showed signs of nervousness. The goldeneye dived and the Scaup sat up in even greater anxiety, then suddenly rose in a real hurry as the goldeneye erupted right underneath her.

Later the same day we came back to camp to find the same performance being repeated with a Tufted Duck (*A. fuligula*) in charge of a single duckling. The adult Tufted was eventually driven out on to the bank by a series of torpedo attacks and chases over the water, and then the goldeneye set about the duckling, pecking it viciously and holding it under water. Our arrival came too late to save the duckling, and later at the water's edge we found four small corpses which were almost certainly the rest of the brood that had suffered the same fate. The adult Tufted Duck made only the feeblest attempts to intervene.

During our stay at Myvatn we witnessed further attacks on a female Tufted Duck, a female Scoter (*Melanitta nigra*), a Scaup and a Scoter (attacked simultaneously and quickly left sitting on the bank like so many wallflowers at a dance), another female Scaup, and a third female Scaup with a brood of six small ducklings. Here again the mother was driven out of the water and the Barrow's Goldeneye then turned on the ducklings. The mother made half-hearted attempts to intervene, but these were largely ignored by the goldeneye who would undoubtedly have killed off the whole brood if we had not driven her off with a barrage of stones. On two occasions we saw the goldeneye drive off drakes of her own species, and once she evicted another duck Barrow's Goldeneye. In fact the only duck that were seen to visit the pool unmolested were a Mallard (*Anas platyrhynchos*) and a Teal (*A. crecca*) with brood.

We saw only two other Barrow's Goldeneye with broods while we were at Myvatn. One was on a small pool where there were no other duck. The other (with two young) was at the narrow entrance to a bay of the main lake and we watched this bird behaving in just the same way, driving a Scaup on to the bank and then setting on its ducklings.

Dr. Finnur Gudmundsson tells me that this aggressive behaviour on the part of the female is typical of Barrow's Goldeneye. I am not aware of any records of similar behaviour for the closely related European Goldeneye (*B. clangula*), and J. Delacour (*The Waterfowl of the World*, Vol. 2, pp. 180 and 186) gives both species an excellent character when breeding alongside other ducks in captivity.

D. G. ANDREW

Kestrel killing Turnstone.—Since few waders are recorded in *The Handbook* as prey of the Kestrel (*Falco tinnunculus*), I should like to record that on 22nd December 1957 I saw a female Kestrel attack and kill a Turnstone (*Arenaria interpres*) at Hilbre Island, Cheshire. It made off with the corpse, but dropped it in the sea.

J. A. McCULLOCH

Grey Phalarope blowing bubbles.—On 3rd November 1959 we watched a Grey Phalarope (*Phalaropus fulicarius*) feeding in a fresh-water pool on Walney Island, Lancashire. Whenever its bill was below the surface, numerous bubbles rose and collected at that point. There were no aquatic plants where the bird was and, as the depth of water was too great for it to reach the bottom, the bubbles were certainly not liberated air-pockets or marsh gas. The bird was therefore apparently exhaling below water for some reason.

LEONARD COWCILL and ALLAN SMITH

Rubber band in Little Tern's stomach.—Further to G. R. Bennett's note on acute gastritis in a Puffin (*Fratercula arctica*) which had swallowed a number of rubber bands (*Brit. Birds*, 53: 222), I should like to record a similar experience of my own. Approximately six years ago, in the early autumn, I picked up the well-preserved body of an immature Little Tern (*Sterna albifrons*) at Rye, Sussex. Dissection revealed a red rubber band in a stomach which had well-marked acute ulcers and threads of fresh blood clot. Unfortunately I cannot recall whether there was blood in the gut.

A. G. HOCKEN

Little Owl taking Nuthatch.—On 7th July 1959, at Sway, Hampshire, I cleared out a nest-box in which Little Owls (*Athene noctua*) had reared three young. Among several bird-rings in it was one from a juvenile Nuthatch (*Sitta europaea*) which had been seen alive up to 28th June. This seemed a rather unexpected victim and the species is not specifically mentioned as prey in *The Handbook*.

EDWIN COHEN

Red-rumped Swallow in Kent.—On 21st May 1960, at Yalding gravel pits, Kent, we saw a Red-rumped Swallow (*Hirundo daurica*) flying with a large mixed flock of Swifts (*Apus apus*), Swallows (*H. rustica*), House Martins (*Delichon urbica*) and Sand Martins (*Riparia riparia*). These birds were attracted to swarms of insects that were coming off a load of rotting apples dumped by a local packing station. We erected two mist-nets, but unfortunately we failed to catch the Red-rumped Swallow although we trapped many birds of the other four species. However, in all we had it under observation for over an hour and down to ranges as close as three feet, so that we had plenty of opportunity to notice all the details.

It was roughly the size and shape of a Swallow, but the streamers of the tail were a little shorter. The upper-parts appeared brown, very dark on the crown, back and tail, and more of a "Sand Martin brown" on the wings; no trace of blue as in the common Swallow was noted. The rump was a very conspicuous pinkish-buff. The under-parts

were also pinkish-buff, but a little lighter. Its flight was markedly different and appeared to be "lazy" by comparison with that of the other birds it was accompanying. Because of this slower, almost flapping flight it could easily be picked out of the flock at ranges of at least 200 yards. It was not heard to call. A visit by other observers later in the afternoon failed to find the bird again.

E. G. PHILP and E. C. STILL

[Only eight previous records of this species in Britain and Ireland are now accepted. The last one was also in Kent and as recently as 1959 (*Brit. Birds*, 53: 222-223).—EDS.]

Notes on the Tennessee Warbler.—Of over fifty species of North American wood warbler (Parulidae), only six have so far been recorded in Europe: the Black-and-White (*Mniotilta varia*), Parula (*Parula americana*), Myrtle (*Dendroica coronata*) and Black-throated Green (*D. virens*) Warblers, the Northern Waterthrush (*Seiurus noveboracensis*) and the Yellowthroat (*Geothlypis trichas*). These species, like almost all the other American wood warblers, are quite different in appearance from any of the Old World warblers (Sylviidae). They should be recognised as "something different" by any experienced European observer and most can be readily identified by reference to R. T. Peterson's *Field Guides*. There is, however, one wood warbler which might easily be overlooked in autumn. The purpose of this note is to draw attention to the fact and to point out how the bird can be recognised, on the same lines as H. G. Alexander's "Field-notes on some Asian leaf-warblers" (*Brit. Birds*, 48: 293-299 and 349-356).

The species concerned is the Tennessee Warbler (*Vermivora peregrina*), which very closely resembles a leaf warbler (*Phylloscopus*) after the moult which occurs in July and August. In the spring and early summer it is quite different and unmistakable, being greenish above with a grey head and white under-parts and eye-stripe. Its breeding range covers most of Canada south of the tree-line, as far east as Newfoundland and Nova Scotia. Each of the six species of wood warbler mentioned above as having been recorded in Europe occurs as a breeding species in either Newfoundland or Nova Scotia or both, so the Tennessee Warbler seems as likely a candidate for North Atlantic drift as these birds. Its autumn migration begins in Canada in July and is over by early October, with the bulk passing in August.

At first sight a Tennessee Warbler in autumn looks very much like a Willow Warbler (*Ph. trochilus*) at the same season. The three best field-characters to distinguish it are (1) its call, (2) its definitely grey legs and (3) its one or two pale wing bars (the last not always present).

To deal first with the voice, the normal call in autumn while feeding and flying is a sharp, frequently uttered $\tilde{\chi}i$ or $\tilde{\chi}i-\tilde{\chi}i$, more resembling

the call of a tit (*Parus*) than that of any European warbler. Several other wood warblers have similar calls. Usually in Canada the Tennessee Warbler occurs in parties, sometimes mixed with other warblers, so this call is likely to be a contact note which might not be heard at all from a stray waif on the wrong side of the Atlantic. Occasionally I have heard the note sharpen into a loud *chit* and sometimes a short song is uttered in autumn, consisting of a stuttering trill of repeated *chit* notes, changing pitch rapidly up and down and lasting only about one second. This is quite unlike the breeding song and I have assumed it comes from young birds.

Though its appearance in autumn generally very much recalls a Willow Warbler, it is a very variable species in detail. However, as mentioned, the legs are always grey (from medium to dark in shade) and they are slender, not stout as in *Hippolais*. The upper-parts are decidedly a greenish-olive, never brownish, and the rump and upper tail-coverts are even brighter, more yellowish. There is usually (but not always) a faint or fairly noticeable wing-bar formed by yellowish-white tips to the greater coverts, and occasionally pale tips to the median coverts give a second faint bar. The greenish back and the wing-bar are closer to features of the Arctic Warbler (*Ph. borealis*). However, the under-parts are definitely yellow in most birds, deepest on the throat and upper breast, palest on the chin, belly and under tail-coverts. Contrary to the description in the text-books, I have seldom seen a Tennessee Warbler in autumn with really white under tail-coverts. This may be because most are young (the juvenile has no white below) and they leave my latitude in the Province of Quebec (49° N) during July and August before the moult into first-winter plumage is complete. Dr. I. C. T. Nisbet (*in litt.*) has commented, "In my (rather limited) experience, this species is more apt to suggest a Wood Warbler (*Ph. sibilatrix*) than any other *Phylloscopus*, though its wings do not come so far down the tail, and there is no sharp contrast between the yellow breast and the white belly." I believe he has seen the species further south, in the United States, where perhaps the moult is further advanced. There is frequently an olive tinge on the breast, but this is faint. The pale yellow superciliary stripe is no more prominent than on the Willow Warbler, extending from the forehead to the eye and as far again behind the eye. The slender bill is brown, paler on the lower mandible but not very noticeably so. The tail and legs are a little shorter than those of the Willow Warbler, but otherwise the size and shape are very similar.

The behaviour strongly resembles that of the *Phylloscopus* warblers. On autumn migration, the Tennessee Warbler is found especially in bushes, though it also occurs in high trees and I have seen it on the ground. It searches rapidly and restlessly through the foliage, often

picking insects from the under-surfaces of leaves, sometimes hovering before a leaf or hanging upside-down to reach its prey, and it frequently flies from tree to tree. I have observed both wing- and tail-flicking in this species, but less so than is usual in *Phylloscopus* warblers. The Tennessee Warbler is not specially tame, usually appearing conscious of an observer at twenty feet.

During the course of several autumns in Canada, I have examined four Tennessee Warblers in the hand and I noted in each case that the under wing-coverts and axillaries were white fringed with pale yellow, thus contrasting with the yellowish breast and flanks. Having been unable to find any published details of the wing-formulae or measurements of this species or any other American wood warbler, I think it is of value to summarise these data from these four birds:

Wing-formulae (primaries): 1st 6-8 mm. shorter than longest primary covert, 3rd and 4th longest and equal, 5th 2-2.5 mm. shorter, 6th 5-7 mm. shorter, 7th 8-10.5 mm. shorter, 8th 10-12 mm. shorter, 9th 11-14 mm. shorter, 10th 14-16 mm. shorter, 2nd between 4th and 5th (3 birds) or equal to 5th (1 bird). Emargination on outer web of 3rd, 4th and 5th (less noticeable on 5th than on other two). *Measurements*: wing 59-67.5 mm., tail 37-42 mm., tarsus 16-17.5 mm., bill from skull 11.6-13.0 mm.

In wing-formulae and measurements, as well as in several aspects of plumage colour, the Tennessee Warbler seems to be closest to the Arctic Warbler among the genus *Phylloscopus*. This may be due to a convergence of characters, but I take the view that it more likely indicates common descent, especially as the Arctic Warbler is the only member of its genus to extend its range into North America (Alaska).

It is perhaps worth mentioning that another wood warbler, the Orange-crowned Warbler (*V. celata*), somewhat resembles the Tennessee Warbler in the autumn. The head and upper-parts are greyer, however, and contrast less with the under-parts, which are very indistinctly streaked. This species seems much more unlikely to occur in Europe in any case, as it does not breed east of Manitoba and is found only in small numbers on migration in the north-eastern United States and eastern Canada. Dr. Nisbet has also commented, "Some Black-throated Blue Warblers (*D. caerulescens*) also look much like *Phylloscopus* warblers, even in spring. This is a larger species, however (larger than an Arctic Warbler); its upper-parts are darker, brownish or greyish-green, and its eye-stripe is comparatively faint; some also show a light spot at the base of the primaries. This species also has a sharp *chit* note, less sibilant than a Tennessee's." I have only seen this bird once apart from adult males (which are entirely different from the plumage described above). It was very distinctive, being dark above and having a dark cheek contrasting strongly with a pale eye-stripe and pale buffish under-parts. I did not think it resembled a *Phylloscopus* warbler.

P. W. P. BROWNE

Goldcrest eating bread and fat.—In January 1959 I was interested to see a Goldcrest (*Regulus regulus*) at a bird-table at Par, Cornwall, and, since *The Handbook* gives “chiefly spiders and insects, their larvae and eggs . . . and bud scales” as the food of this species, I asked Miss Abson, who lives in the house, to note precisely what the bird took. She later reported that it was a regular visitor to the table, that after pecking at seeds on one occasion it took no further notice of them, and that it regularly and eagerly ate soft bread and fat.

JULIAN HUXLEY

Reviews

The Isle of May. By W. J. Eggeling. Oliver & Boyd, Edinburgh and London, 1960. xiv+280 pages; 20 photographic plates. 30s. The firm of Oliver & Boyd has for some time been earning a deservedly high reputation for the publication of natural history books of fine quality, a reputation that stands to be enhanced by Dr. W. J. Eggeling's *The Isle of May*, which sets a new standard for island literature. To many readers of *British Birds*, the Isle of May will be known solely as “the other Scottish bird observatory”. It has, however, a long and fascinating ecclesiastical and civil history, to which the earlier chapters of the book relate, detailed by an author who has known and loved his island from boyhood, and who has taken part in the episodes which have gone to form its more recent history.

And what a chequered history it has had! Of massacre and martyrdom, obscured in the mists of lore and legend; of being the site of a priory and chapel, fully documented from the twelfth century, maintained as a religious house until 1549, and dependent, curiously, for a century and a half upon the Abbey of Reading; of being a place of pilgrimage for barren women, though if Dr. Eggeling had read the account in Gordon's *Ecclesiastical Chronicles for Scotland* he would have known that the cure lay not in the virtues of the Pilgrims' Well but in a “Recipé possessed by the lusty Friars, though some of the women thought that the Air did it”. Later a refuge of Jacobites, it afterwards degenerated to become a haunt of pirates, smugglers and wreckers, and supported for a brief period a small fishing village. The island also came into prominence in 1636 as the site of the first warning beacon to shipping on the Scottish coast, a simple coal-burning flare which consumed fuel at the prodigious rate of three tons a night in stormy weather and was only as late as 1816 replaced by a modern lighthouse, the one in existence today.

No less romantic is the history of the bird observatory, projected and brought into being by a group of Edinburgh schoolboys, later to become the first co-operatively manned station of this kind in Britain. A large section of the book deals with the work of the observatory and with the island's breeding and migratory birds (including a list of recoveries of those ringed there), but other branches of natural history are covered in an equally able manner. The latter chapters comprise an annotated catalogue of insects, flowering plants, ferns, mosses, liverworts, lichens and fungi. There is even room for a section on rock climbs, and a review would be incomplete without reference to the anthology from the observatory log, which includes gems from the works of an (almost) anonymous Scottish poet. In conclusion, there is a useful classified bibliography and a list of the island's place names.

The author of this book successfully fulfils the dual role of historian and systematist, combining a readable account of the island's history with an orderly work of reference which will undoubtedly become a model of its kind in the future. I.D.P.

Wideawake Island. By Bernard Stonehouse. Hutchinson, London, 1960. 260 pages, with photographs and line drawings. 35s.

This book on the British Ornithologists' Union Centenary Expedition to Ascension Island has the refreshing merit of containing almost no scientific data (there is only one table in it) and it is thus a most eminently readable and humorously written account of the activities of a group of people who spent eighteen months on a remote island in the Atlantic. Ascension is not well known and its chief peculiarity is the unusual breeding cycle of the Sooty Tern or Wideawake at a regular interval of between nine and ten months. Why should the Sooty Tern adopt this curious cycle at just this one place? In the Indian Ocean, similarly on the Equator, it nests annually just like any other self-respecting bird. On the other hand, on certain Pacific islands it breeds twice in a year, though there two separate populations may be involved. This book tantalises us by offering no real answer to all this, though it may help to underline the problem. It is suggested that the Sooty Tern may complete its physiological processes (including moulting) in less than one year and thus be able to breed at intervals of ten lunar months—a special “internal rhythm”—but this makes no sense at all. Equatorial birds almost always breed annually, being dependent only, as far as is known, on external factors such as food supply and rainfall. J. P. Chapin first drew attention to this phenomenon on Ascension; perhaps Dr. Stonehouse will try to explain the fascinating problem more fully in the scientific papers still to come.

Besides readability and a style unusual in the writings of modern ornithologists, the book has the merit of simplicity and interest. It is not conjectural, except in a few last paragraphs; it is a factual account of an expedition. We learn a lot about the other birds. The list of species is meagre, as always on oceanic islands, and the selection is astonishingly similar to that found on all islands on the Equator. It includes two species of bo'sun-birds, Frigate-birds, Masked and Brown Boobies, Noddy and Fairy Terns, shearwaters and, amongst land-birds, introduced Canaries and Mynahs. The expedition consisted of several members, each of whom allotted himself certain species to study, one of the objects being to compare their breeding cycles with those of the Sooty Tern, and the enthusiasm and ability of these people is self-evident on every page. The admirable example set by Mrs. Stonehouse, who could do everything from mending the Government House curtains to weighing the malodorous newly-hatched Frigate-bird, must inspire all expedition wives.

The photographs are very good indeed and, what is more important, illustrate the story completely. There is an excellent index, but there should also have been a brief bibliography. The book is a most important addition to the library of anyone interested in remote islands or sea-birds, and every ornithologist will sympathise with Dr. Stonehouse when he was asked on board ship, "Oh, bird-watchers. Do you know Peter Scott?"

M.W.R.

Bird Song. By Ludwig Koch. Talking Books in association with Methuen, London, 1960. One 7-inch long-playing record (33 r.p.m.) with 12-page illustrated booklet. 8s. 6d.

This "talking book" is obviously intended primarily for children, but it will also have value as an introduction to bird song for other beginners. In this, the first book of a promised series, the intention is to teach reader-listeners the songs of "ten of our very common British birds, which you can hear in town, in your garden and in the field". They include House and Tree Sparrows, Dunnock, Carrion Crow, Rook, Raven, Starling, Song and Mistle Thrushes, and Blackbird (though Raven and Tree Sparrow hardly fit into the category defined). Thus only residents are dealt with on this first record—an excellent scheme to enable pupils to get in some basic listening before the warblers and other summer visitors arrive, but the opportunity has been largely missed. Clear-cut songs which can usually be heard individually and which offer the novice some chance of early success (e.g. Robin, Great Tit, Chaffinch, Yellowhammer and Woodpigeon) are totally disregarded, and far too much stress is laid on aspects of bird voices which should come at a much later stage in the student's development. Thus a great deal of the very first lesson is devoted to

the various sounds which a House Sparrow may emit—with individual interpretations which may not please every biologist.

The recordings themselves, as one would expect, are excellent; two, those of a Mistle Thrush in a thunderstorm and a Raven against a background of Atlantic breakers, are wonderfully true and evocative, although in the latter case the rollers almost overpower the Raven. Since there is a commentary on the record, it might have been used to advantage for brief identification of some of the species responsible for background song, particularly when, as with the Dunnock, they come within the scope of this book.

Illustrations are adequate, but not outstanding in either colour or drawing, and in some cases, as with the two sparrows and the two thrushes, they fail to emphasise the salient plumage differences between species that may be confused.

W.D.C.

Bird Migration: A Bulletin of the British Trust for Ornithology. Edited by Kenneth Williamson. Published twice yearly, January and August. 3s. 6d. per issue.

In January 1958 a grant from the Nuffield Foundation enabled the British Trust for Ornithology to take two important steps to ensure a fuller and more coherent study of migration in Britain. The first was to appoint Kenneth Williamson as Migration Research Officer and the second was to start publication of a bulletin devoted entirely to migration. The new journal is edited by the Migration Research Officer and, as now evolved, each issue summarises the preceding migration both generally and individually by observatories, and includes additional articles on movements of special note and other subjects linked to the main theme.

The first issue, published in December 1958, was concerned with the autumn migration of 1958 and included reports from 19 observatories and two other temporary stations; the fourth and latest issue, published in August 1960, covered the spring movements of 1960 at no less than 31 fully-fledged observatories and watch-points. A glance at the maps showing the positions of the stations reported on in these issues shows clearly how the increase in their number has improved the coverage of the British and Irish coastlines by migration students. Nowhere is this more obvious than in the south of England where four observatories and trapping stations now cluster round the Isle of Wight and its waters. Serious gaps remain, particularly in north-east and west Scotland and western Ireland. However, through the bulletin, the Migration Research Officer continues to encourage the discovery of new places. The outstanding successes of the Cape Clear exploration would be much less significant if they could not be presented in comparison with the records of the Irish

Sea stations. Nowhere else but in *Bird Migration* can such records receive the immediate attention that is their due.

The records from every observatory for the migration season under review are afforded similar treatment, the movements being summarised chronologically by regular correspondents from each station. Full descriptions of the periods of passage, in many cases correlated to weather conditions, are given and special mention is made of any rarities or unusual occurrences. In this way an invaluable picture of each observatory's work is obtained, allowing the reader to grasp the real dimensions of avian migration in a way never possible before. There has been considerable variation in the space afforded to certain observatories from issue to issue and irritating differences in the style of reporting are not yet fully resolved. By and large, however, a good balance is struck and the whole united by the editor's general analyses of each migration. These have proved illuminating on several occasions, notably when dealing with the difficult problem of "overshooting", caused, it is suggested, by a migrant's failure to resolve the clash between the external and internal factors of optimum passage conditions and a spent migrational urge. Sensibly, less complicated subjects, such as godwit movements and the continued internal expansion of the Collared Dove, have also been given space.

Of the more important papers published so far in conjunction with the individual observatory reports, no ornithologist, bird-watcher or ringer should miss the description of a considerable passage of Redwings at sea off Iceland in April 1959 (vol. 1, no. 2, p. 81), the review of Meadow Pipit migration and systematics (vol. 1, no. 2, p. 88), the discussion of moult as a study in field taxonomy (vol. 1, no. 4, p. 171) and the study of ringing recoveries as an aid to interpreting bird movements (vol. 1, no. 4, p. 176). The last contains some well-conceived maps showing certain species' migration routes. Other diagrams and schedules are used frequently throughout the journal to illuminate the text. One feels that perhaps more use might be made of this sort of presentation, especially with regard to the occurrence patterns of eastern rarities.

It is as well that the new bulletin recognises its own weakness, that it is based on purely coastal observations and cannot at the moment hope to present a total summary of movements into, through, over and out of Britain and Ireland. Nevertheless, it is a great bound in the right direction and the observations of a few inland bird observatories are all that are needed to complement the material already available for interpretation.

The "long-felt need" for a journal to give a more adequate expression to migration studies has been well met. No one interested in this still miraculous phenomenon should lack its stimulus. D.I.M.W.

Letters

International ornithological congresses

Sirs,—In his review of the *Proceedings of the XII International Ornithological Congress* (*Brit. Birds*, 53: 447-452) your reviewer makes some most relevant observations concerning the present nature of these meetings. While I agree with his points entirely, I should like to suggest that there is another aspect of the subject which deserves particular attention in this country—the nature of the British contribution to the Congress. As your reviewer points out, we provided nearly a quarter of the participants, so presumably we must take at least an equal proportion of the responsibility for the consequent character of the proceedings, and such features as the absence of too many leading ornithologists, the appearance of too much dead wood on the agenda, and the presence of far too many passengers in search of a cheap organised holiday at the expense of the host country.

I think I could go further than that. On the last day of the Helsinki Congress I was privileged to listen to a group of the most distinguished foreign ornithologists discussing their impressions of it. It was generally agreed that while the Finns in general and Dr. von Haartman in particular had put up a remarkably fine performance, it was unfortunate that the Congress had been dominated to such an extent by people of two nationalities, physically by the British, intellectually by the Germans. This point is amply demonstrated by a comparison of the number of people of different nationalities attending the Congress with the number of papers which they subsequently published in the *Proceedings*. Numerically the British far outnumbered everyone else, followed by the Germans, Finns, Americans, Swedes, Swiss and Dutch in that order. The Germans eventually produced by far the largest number of papers, followed by the British, the Americans, the Russians and the Swiss; it is hardly surprising that the Scandinavians were now relatively less prominent, but I am surprised to observe that the Dutch are nowhere. This might merely indicate that the Germans read too many papers while we had better taste, were it not for the fact that they produced a number of the best ones while we produced if anything rather more of the worst. In fact, I fear that the main British contribution to the agenda was to ignore the tedious discussions being conducted by unintelligible foreigners and rush about in noisy flocks busily ticking off the names of strictly British rare birds and prominent personalities on little lists while waiting impatiently for the start of the excursions. The best British ornithologists stayed at home and held another conference all by themselves at Cambridge the following

BRITISH BIRDS

TABLE—A COMPARISON OF THE NUMBER OF PARTICIPANTS OF DIFFERENT NATIONALITIES AT THE XII INTERNATIONAL ORNITHOLOGICAL CONGRESS WITH THE NUMBER OF PAPERS WHICH THEY READ

There were 98 papers, so the number of papers per country and the percentage composition of all papers are approximately the same.

Nation	Participants	Percentage of total	Papers	Nation	Participants	Percentage of total	Papers
Australia	1	0.2	2	Netherlands	22	4	0
Canada	8	1.6	1	Norway	5	1	1
Czechoslovakia	3	0.6	2	Poland	3	0.6	2
Denmark	12	2.4	3	South Africa	4	0.8	0
Finland	60	12	4	Spain	16	3.2	2
France	12	2.4	4	Sweden	42	8	2
Germany	83	17	21	Switzerland	25	5	6
Great Britain	110	22	14	U.S.A.	59	12	12
Hungary	2	0.4	4	U.S.S.R.	9	1.8	9
Italy	15	3	1	Others	20	4	8

spring, where they read all the papers that could have restored our reputation at Helsinki.

This appears to me a deplorable state of affairs, coinciding as it did with the orgy of national self-congratulation which marked the anniversary celebrations of the British Ornithologists' Union and your journal, and I should like to suggest to my seniors who manage these things that it is time we rid ourselves of our complacency and insularity and took more positive steps to see that British ornithology is represented more worthily in international affairs in future. In particular, it seems to be generally agreed that international congresses are becoming overpopulated, and as the worst offenders we might very well take the lead in urging the International Ornithological Committee to restrict the numbers of each nationality who are allowed to attend to a definite quota nominated by the senior ornithological societies. It would then be up to our senior societies to act together to make sure that this country is represented by all the most suitable people and only the most suitable people in future, before we smother or distort the character of this valuable international function entirely.

W. R. P. BOURNE

European records of Ross's Gull

Sirs,—May I correct a statement (*Brit. Birds*, 53: 445) concerning the number of records of Ross's Gull (*Rhodostethia rosea*) in Europe? An adult was shot on 5th December 1955 on the island of Fyn in Denmark, the first record for that country (*Dansk Orn. Foren. Tidsskr.*, 51: 132-3) and it therefore appears that the Dutch bird (*Brit. Birds*, 52: 422-4 and plates 66-69; also 53: 95) was the fourteenth and hence the Northumberland bird (*Brit. Birds*, 53: 444-5) the fifteenth record for Europe.

EVAN SALHOLM

Short index of English names of birds

This simplified index is confined to the numbers of the first pages of papers, notes and letters on the species concerned. Casual references to other species within the text are not included, nor are birds discussed in reviews or in the "Recent reports and news". However, such lists as the "Report on bird-ringing for 1959" and "Report on rare birds in Great Britain and Ireland in 1959" are completely indexed here.

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